

Access DB# 65752**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Pratt, Helen Examiner #: 66036 Date: 4-29-02
Art Unit: 1761 Phone Number 308-1978 Serial Number: 09
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If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: MACA Products + their uses
Inventors (please provide full names): Paul Bro Bobrowski, et al.

Earliest Priority Filing Date: 9-5-00

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Claims 1, 2 +claim(2-1) maca(powdered) + water and eggsPl.~**STAFF USE ONLY**

	Type of Search	Vendors and cost where applicable
Searcher: <u>EL</u>	NA Sequence (#) _____	STN <u>\$ 51.56</u>
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Online Time: <u>75</u>	Other _____	Other (specify) _____

=> d his

(FILE 'HCA' ENTERED AT 09:46:43 ON 08 MAY 2002)

DEL HIS Y
L1 QUE 17/SC,SX
L2 253665 S FOOD?
L3 43 S MACA OR MACAS
L4 QUE WATER? OR H2O OR AQ# OR AQUEOUS?
L5 10215 S EGGWHITE# OR EGG#(2A)WHITE#
L6 7 S L3 AND (L1 OR L2)
L7 0 S L6 AND L4
L8 0 S L6 AND L5
L9 3 S L3 AND L4
L10 0 S L3 AND L5
L11 10 S L6 OR L9

=> d l11 1-10 cbib abs hitind

L11 ANSWER 1 OF 10 HCA COPYRIGHT 2002 ACS

136:19393 Health ***food*** preparation. Yamada, Tsuyoshi (Astrim
K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2001348334 A2 20011218, 5
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-167591
20000605.

AB The health ***food*** is prepd. from Guarana, ***maca*** or
maka (Lepidium meyenii) ext., placenta, Pueraria, and birch ext. as
the active ingredients. Laticauda semifasciata, reindeer horn, fur
seal, zinc, Trionyx sinensis, viper, and/or scorpion is also used as
other ingredient in the prepn. of the health ***food***.

IC ICM A61K035-78

ICS A61K033-30; A61K035-12; A61K035-56; A61K035-58; A61K035-60;
A61P003-02

CC ***17-14*** (Food and Feed Chemistry)

Section cross-reference(s): 63

ST health ***food*** Guarana maka ext; Pueraria Laticauda fur seal
health ***food***

IT Guarana (Paullinia cupana)

Health ***food***

Health products

Laticauda semifasciata

Lepidium meyenii

Placenta

Scorpion

Trionyx sinensis

Vipera ammodytes ammodytes

(Health ***food*** prepn.)

IT Beverages

(carbonated, tonics; Health ***food*** prepn.)

IT Pepper (Piper methysticum)

(ext. of; Health ***food*** prepn.)

IT Seal (animal)

(fur seal; Health ***food*** prepn.)

IT Caribou and Reindeer (Rangifer)

(horn of; Health ***food*** prepn.)

IT Natural products, pharmaceutical

(maka ext.; Health ***food*** prepn.)

IT Drug delivery systems
(tablets; Health ***food*** prepn.)
IT 7440-66-6, Zinc, biological studies
(Health ***food*** prepn.)

L11 ANSWER 2 OF 10 HCA COPYRIGHT 2002 ACS

135:355294 Glucosinolate contents in ***maca*** (Lepidium peruvianum Chacon) seeds, sprouts, mature plants and several derived commercial products. Li, Genyi; Ammermann, Uwe; Quiros, Carlos F. (Department of Vegetable Crops, University of California, Davis, CA, 95616, USA). Economic Botany, 55(2), 255-262 (English) 2001. CODEN: ECBOA5. ISSN: 0013-0001. Publisher: New York Botanical Garden Press.

AB Several products derived from processed ***maca*** hypocotyls (Lepidium peruvianum Chacon, previously known as L. meyenii Walp.) were surveyed for glucosinolate content and quantified by HPLC anal. These included pills, capsules, flour, liquor, tonic and mayonnaise. Different plant organs such as fresh hypocotyls and leaves, seeds, dry hypocotyls, and sprouts were also included in the survey. The most abundant glucosinolates detected in fresh and dry hypocotyls and leaves were the arom. glucosinolates, benzylglucosinolate (glucotropaeolin) and p-methoxybenzylglucosinolate. ***Maca*** seeds and sprouts differed in profile from hypocotyls and leaves due to the modification of benzylglucosinolate. No glucosinolates were detected in liquor and tonic, while mayonnaise had only trace amts. of those glucosinolates. It had instead allylglucosinolate (sinigrin), which is an aliph. glucosinolate. The pills, capsules and flour had the same glucosinolates as those obsd. in hypocotyls, but in variable amts. The richest sources of glucosinolates were seeds, fresh hypocotyls and sprouts, in that order.

CC 11-1 (Plant Biochemistry)
Section cross-reference(s): ***17*** , 64

ST glucosinolate ***maca*** com product; Lepidium com product
glucosinolate

L11 ANSWER 3 OF 10 HCA COPYRIGHT 2002 ACS

135:317573 Yacon (Smallanthus sonchifolius) and ***maca*** (Lepidium meyenii), traditional Andean crops as new functional ***foods*** on the European market. Valentova, Katerina; Frcek, Jan; Ulrichova, Jitka (Ustav Lek. Chem. a Biochem., Lek. Fakulta, Univ. Palackeho, Olomouc, 775 15, Czech Rep.). Chemicke Listy, 95(10), 594-601 (Czech) 2001. CODEN: CHLSAC. ISSN: 0009-2770. Publisher: Ceska Spolecnost Chemicka.

AB A review with 60 refs. Yacon and ***maca*** are traditional crops grown by the original population of Peru and are also used in traditional medicine. These plants are little known in Europe and Northern America, although they can be cultivated in the climatic conditions of these regions. The botanical aspects of the 2 species, growing conditions in the Czech Republic, chem. compn., structure of main compds., and biol. activity are discussed. These 2 plants are already on the European market as prospective functional ***foods*** and nutraceuticals for use in certain risk groups of population.

CC ***17-0*** (Food and Feed Chemistry)
Section cross-reference(s): 1, 11, 18

IT Diet
(therapeutic; yacon (Smallanthus sonchifolius) and ***maca*** (Lepidium meyenii) as traditional Andean crops and new functional ***foods*** on European market)

IT Lepidium meyenii

Nutrition, animal

Smallanthus sonchifolius

(yacon (Smallanthus sonchifolius) and ***maca*** (Lepidium meyenii) as traditional Andean crops and new functional ***foods*** on European market)

L11 ANSWER 4 OF 10 HCA COPYRIGHT 2002 ACS

134:22036 Binding Energies for Doubly-Charged Ions $M^{2+} = Mg^{2+}$, Ca^{2+} and Zn^{2+} with the Ligands $L = H_2O$, Acetone and N-methylacetamide in Complexes ML_n^{2+} for $n = 1$ to 7 from Gas Phase Equilibria Determinations and Theoretical Calculations. Peschke, Michael; Blades, Arthur T.; Kebarle, Paul (Department of Chemistry, University of Alberta, Edmonton, AB, T6G 2G2, Can.). Journal of the American Chemical Society, 122(42), 10440-10449 (English) 2000. CODEN: JACSAT. ISSN: 0002-7863. Publisher: American Chemical Society.

AB Exptl. and theor. binding energies, entropies, and free energies are reported for $M(L)_n^{2+}$ complexes, where $M = Zn, Mg, Ca$ and $L = acetone (Me_2CO)$ and N-methylacetamide (***MACA***), as well as ***water*** for comparison. For the theor. binding energies, expressed as dissocn. energies ($\Delta H_{dissoc}(n,n-1)$), n extends up to 3 for the $Mg-Me_2CO$ system, while for the exptl. binding energies, n starts as low as 5 for the $Zn-$ and $Mg-acetone$ systems and reaches as high as 9 for the $Ca(***MACA***)$ system. For $n = 1$ complexes, Zn exhibits the strongest binding (due to $sd.\sigma$ hybridization and charge transfer), followed by Mg and then Ca (primarily electrostatic binding, with Mg being smaller). For the ligands, the trend based on dipole and polarizability holds for $n = 1$, with ***MACA*** exhibiting the strongest binding, followed by Me_2CO and then H_2O . However, as n increases, the bond enthalpies drop at rates that cause them to equalize within a few kcal/mol for $n = 6$. The obsd. trend of bond enthalpy equalization has been attributed to primarily ligand-ligand repulsion in the case of Mg and Ca complexes. For the Zn complexes, loss of $sd.\sigma$ hybridization and charge-transfer play an added role so that, for example, for $Zn(H_2O)_{32}^{2+}$ and $Zn(H_2O)_{42}^{2+}$, the binding energies are lower than for the Mg analogs, despite the shorter bond distance in the Zn complexes. The exptl. bond enthalpy and entropy differences for $M(Me_2CO)_n^{2+}$, where $M = Ca$ and Mg and $n = 6$ and 7, show a sharp drop that corresponds to a transition to an outer shell for the seventh Me_2CO ligand. The entropies for the addn. of the seventh ligand are much smaller than for the sixth ligand and correspond to a ligand that, due to the absence of ligand-ligand bonding interactions, is free to translate across the entire inner shell. The lower bond enthalpy and entropy for Zn as compared to Ca and Mg indicate that the transition to an outer shell is earlier for Zn . The strong hydrogen bonding between outer-shell and inner-shell ***MACA*** ligands, indicated for $Ca(***MACA***)_{72}^{2+}$, allows earlier transitions to an outer shell for $Zn-$ and $Mg-***MACA***$ complexes as compared to their acetone analogs. Implications of the ligand interactions in the exptl. obsd. Ca complexes to Ca -contg. proteins is also discussed.

CC 69-2 (Thermodynamics, Thermochemistry, and Thermal Properties)

ST binding energy magnesium calcium zinc acetone methylacetamide ***water***

IT Vapor-liquid equilibrium
(binding energies for Mg^{2+} , Ca^{2+} and Zn^{2+} with ligands H_2O , acetone and N-methylacetamide in complexes ML_n^{2+} from gas phase equil. detns. and theor. calcns.)

IT Electron hybridization
 Electron transfer
 Hydrogen bond
 (binding energies for Mg²⁺, Ca²⁺ and Zn²⁺ with ligands
 H₂O , acetone and N-methylacetamide in complexes MLn²⁺ in
 relation to)

IT Binding energy
 Complexation enthalpy
 Complexation entropy
 Dissociation energy
 (for Mg²⁺, Ca²⁺ and Zn²⁺ with ligands ***H₂O*** , acetone and
 N-methylacetamide in complexes MLn²⁺ from gas phase equil. detns.
 and theor. calcns.)

IT Molecular structure
 (for complexes of Mg²⁺, Ca²⁺ and Zn²⁺ with ligands ***H₂O*** ,
 acetone and N-methylacetamide)

IT Free energy
 (of complexation; for Mg²⁺, Ca²⁺ and Zn²⁺ with ligands
 H₂O , acetone and N-methylacetamide in complexes MLn²⁺
 from gas phase equil. detns. and theor. calcns.)

IT Force
 (steric; binding energies for Mg²⁺, Ca²⁺ and Zn²⁺ with ligands
 H₂O , acetone and N-methylacetamide in complexes MLn²⁺ in
 relation to)

IT 7440-70-2, Calcium, properties
 (binding energies for Ca²⁺ with ligands ***H₂O*** , acetone,
 and N-methylacetamide)

IT 7439-95-4, Magnesium, properties
 (binding energies for Mg²⁺ with ligands ***H₂O*** , acetone,
 and N-methylacetamide)

IT 67-64-1, Acetone, properties 79-16-3, N-Methylacetamide
 7732-18-5, ***Water*** , properties
 (binding energies for Mg²⁺, Ca²⁺ and Zn²⁺ with)

IT 7440-66-6, Zinc, properties
 (binding energies for Zn²⁺ with ligands ***H₂O*** , acetone,
 and N-methylacetamide)

L11 ANSWER 5 OF 10 HCA COPYRIGHT 2002 ACS

133:355004 Cosmetics, bath preparations, and detergents containing plant
 extracts. Doi, Masako; Kondo, Mitsuko; Maeda, Munenori (Ichimaru
 Pharcos Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000319120 A2
 20001121, 21 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 1999-128389 19990510.

AB The cosmetics, bath prepns., and detergents contain .gtoreq.1 plant
 ext. selected from aguaje (*Mauritia flexuosa*), achira (*Canna
 edulis*), algarrobo (*Prosopis pallida*), huito (*Genipa americana*), oca
 (*Oxalis tuberosa*), olluco (*Ullucus tuberosus*), kanihua (*Chenopodium
 pallidicaule*), cupuazu (*Theobroma grandiflorum*), tarwi (*Lupinus
 mutabilis*), ***maca*** (*Lepidium meyenii*), mashua (*Tropaeolum
 tuberosum*), molle (*Schinus molle*), and yacon (*Polymnia sonchifolia*)
 as moisturizers. Prepn. of plant exts. using ***H₂O*** , EtOH,
 1,3-butylene glycol, or propylene glycol was shown. Topical
 toxicity of the exts. in guinea pigs and moisturizing effects in
 humans were also examd. Cosmetics formulations contg. the exts.
 were given.

IC ICM A61K007-00

ICS A61K007-00; A61K007-075; A61K007-08; A61K007-16; A61K007-48;
 A61K007-50; C11D003-382; C11D003-48

CC 62-4 (Essential Oils and Cosmetics)

L11 ANSWER 6 OF 10 HCA COPYRIGHT 2002 ACS

120:215698 Chemical composition of *Lepidium meyenii*. Dini, A.; Migliuolo, G.; Rastrelli, L.; Saturnino, P.; Schettino, O. (Dip. Chim. Sostanze Nat., Univ. Napoli 'Federico II', Naples, 80131, Italy). Food Chem., 49(4), 347-9 (English) 1994. CODEN: FOCHDJ. ISSN: 0308-8146.

AB *Lepidium meyenii* Walpers, a tuber of Andine origin still cultivated in Peru for local prepn., was studied. The carbohydrate, lipid, protein, fiber and also the amino acid, fatty acid, mineral and sterol fractions were detd. This tuber can be a ***food*** source in countries where economic and technol. conditions are inadequate to combat malnutrition.

CC ***17-10*** (Food and Feed Chemistry)

IT Dietary fiber

Nutrients

Amino acids, biological studies

Carbohydrates and Sugars, biological studies

Fatty acids, biological studies

Lipids, biological studies

Mineral elements

Proteins, biological studies

(of ***maca*** tuber)

IT Steroids, biological studies

(hydroxy, of ***maca*** tuber)

IT Vegetable

(tuber, ***maca*** , nutrients of)

L11 ANSWER 7 OF 10 HCA COPYRIGHT 2002 ACS

120:185161 Evaluation of the development toxicity of citrinin using *Hydra attenuata* and postimplantation rat whole embryo culture. Yang, Yung Gung; Mayura, Kittane; Spainhour, Charles Barton, Jr.; Edwards, John Francis; Phillips, Timothy Dukes (Coll. Vet. Med., Texas A and M Univ., College Station, TX, 77843, USA). Toxicology, 85(2-3), 179-98 (English) 1993. CODEN: TXCYAC. ISSN: 0300-483X.

AB The present study was designed to examine whether the in vivo obsd. developmental toxicity of citrinin could be recapitulated using the *Hydra attenuata* (HA) bioassay and then be confirmed in rat whole embryo culture (WEC). Results from the HA assay indicated that the minimal affective concns. of citrinin required to elicit a toxic response in the adult hydra (***MACA***) and in the regenerating hydra (MASD) were 30 mg/L and 20 mg/L, resp.. The *Hydra* developmental hazard index (A/D ratio) was equal to 1.5, classifying citrinin as a coaffective developmental toxin. In WEC, rat embryos were cultured in homologous (rat) serum contg. citrinin at various concn. ranging from 0.0 to 300 .mu.g/mL for a period of 45 h. The results indicated a concn.-dependent redn. in yolk sac diam., crown-rump length, somite no., protein and DNA contents. No embryonic dysmorphogenesis was obsd. in any treatment group. Histol. examn. revealed severe diffuse mesodermal and ectodermal necrosis in embryos treated with 250 .mu.g/mL citrinin. At lower concns. of citrinin, embryos were neither grossly nor histol. different from controls. Both the HA and WEC bioassays demonstrated that citrinin is not a primary development toxin. The use of HA and WEC bioassays in tandem may facilitate the rapid detection and ranking of the developmental hazards of ***food*** and feed-borne mycotoxins.

CC 4-6 (Toxicology)

L11 ANSWER 8 OF 10 HCA COPYRIGHT 2002 ACS

72:131157 Corn in macaroni products. Canuti, Armando (Lab. Chim.,

Cremona, Italy). Tec. Molitoria, 20(22), 627-38 (Italian) 1969.
CODEN: TEMOAZ.

AB Partial predigestion and dextrinization of corn used in the prepn. of ***maca*** roni products represented an improvement from the alimentary and nutrition al point of view. The organoleptic and chem. characteristics of 3 formulations contg. corn meal were described.

CC ***17*** (Foods)

L11 ANSWER 9 OF 10 HCA COPYRIGHT 2002 ACS

50:14507 Original Reference No. 50:2992i,2993a ***Maca*** .acte.uba oil and its industrial utilization. Silva, Moacir Rev. quim. ind. (Rio de Janeiro), 24, 118-20 (Unavailable) 1955.

AB Comparison is made between the oil of ***maca*** .acte.uba palm (Acrocomia sclerocarpa) (I) and the oils of A. totai (II) from Paraguay and A. aculeata from Trinidad (called Gru-Gru); the latter 2 have already been described. The fruit of I from Minas Gerais has the following compn., which does not differ appreciably from the 2 other species: epicarp 28%, mesocarp pulp oil 24, mesocarp endocarp 42%, almond 6%. The oil from the pulp is used only by local inhabitants. The seed-kernel oil shows the following characteristics: d15 0.9212, n15 1.4631, f.p. 23.6.degree., solidification point 18.3.degree., acid no. 3.40, sapon. no. 239.70, ester no. 236.30, iodine no. (Hanus) 23.60, glycerol calcd. 12.76. It is suggested that I and II are identical trees. Their seed kernels give 65% of oil which is suitable for soap manuf. and as a ***food*** . The pulp oil could be utilized for edible purposes or as a raw material for production of palmitic and oleic acid.

CC 27 (Fats, Fatty Oils, Waxes, and Detergents)

L11 ANSWER 10 OF 10 HCA COPYRIGHT 2002 ACS

47:75689 Original Reference No. 47:12843c-f Utilization of the oil from ***maca*** .acte.uba pulp. Martinenghi, G. B. (Inst. oleos, Rio de Janeiro, Brazil). Olearia, 7, 67-72 (Unavailable) 1953.

AB cf. C.A. 47, 10871b; Rocha, C.A. 43, 1837b. The pulp of the fruit of Acrocomia sclerocarpa contains 11.15% ***maca*** .acte.uba oil (I) (4.08% of the whole fruit), a dark-brown liquid of penetrating odor of fermented substances, f.p. 19.degree., m. 25-5.degree., d25 0.9126, nD25 1.4631, acid no. 86.8, sapon. no. 196.5, I no. (Wijs) 80.8, unsaponifiable 1.2%. The fatty acids from I f.p. 28.degree., m. 30.4.degree. (initial), 36.6.degree. (final), neutralization no. (after removal of unsaponifiable) 199.4, av. mol. wt. 281.3, I no. (Wijs) 81.5, thiocyanogen no. 74.4; they contain satd. fatty acids (mostly palmitic acid) 17.4, oleic acid 74.6, and linoleic acid 8.0%. Expts. on refining I (heating in the presence of little ***H2O*** , active earth, or 20 to 80% H2SO4, treatment with KClO3 soln., K2Cr2O7 soln., 33% H2O2, or active C, singly or in combinations) show only limited improvement; deacidification by treatment with solvents or by esterification with glycerol would be uneconomical. Splitting of I (by the Twitchell or the autoclave method) followed by distn. of the fatty acids gives a yield of about 90% of the fatty acids distd. (about 80% calcd. on I).

CC 27 (Fats, Fatty Oils, Waxes, and Detergents)

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(FILE 'HCA' ENTERED AT 09:46:43 ON 08 MAY 2002)

L12 539 S MAKA OR MAKA OR (LEPIDIUM# OR L) (2A) (MEYENII# OR PERUVI
L13 58 S L12 AND (L1 OR L2)
L14 16 S L13 AND L4
L15 0 S L13 AND L5
L16 3392 S PERU OR PERUVIAN#
L17 4300 S RECIPE#
L18 4 S L13 AND (L16 OR L17)
L19 2 S L18 NOT L11
L20 15 S L14 NOT (L11 OR L19)

=> d l19 1-2 cbib abs hitind

L19 ANSWER 1 OF 2 HCA COPYRIGHT 2002 ACS

132:121569 Bioactive substances in exotic fruits. Richling, Elke
(Post-Doc-Stipendiatin der fruit-International Fruit Foundation,
Heidelberg, 69118, Australia). Fluessiges Obst, 67(1), 7-14
(German) 2000. CODEN: FLOBA3. ISSN: 0015-4539. Publisher:
Fluessiges Obst.

AB A brief review with 69 refs. is given on bioactive substances in
exotic fruits. The potential of largely unknown exotic fruits from
all over the world within a healthy nutrition rich in vitamins is
discussed. Exotic fruits are characterized by high contents of
vitamins, carotenoids, other physiol. important plant colorings,
minerals, and fibers. Due to their compn. and flavor diversity,
exotic fruits add to a healthy nutrition.

CC ***17-0*** (Food and Feed Chemistry)

IT Cherimoya (Annona cherimola)

Cyphomandra betacea

Dietary fiber

Durio zibethinus

Fruit

Guava (Psidium)

Lepidium ***meyenii***

Loquat (Eriobotrya japonica)

Mahonia aquifolium

Malpighia glabra

Mango (Mangifera indica)

Myrciaria dubia

Myricaria

Oil palm (Elaeis guineensis)

Papaya (Carica papaya)

Passionflower (Passiflora edulis)

Persimmon (Diospyros kaki)

Phyllanthus acidus

Physalis ***peruviana***

Pouteria lucuma

Roselle (Hibiscus sabdariffa)

(bioactive substances in exotic fruits)

L19 ANSWER 2 OF 2 HCA COPYRIGHT 2002 ACS

127:330592 Bromatological studies on ***Lepidium*** ***meyenii***
. Comas, M.; Miquel, X.; Arias, G.; de la Torre, M. C. (Nutricion
Bromatologia, Univ. Barcelona, Spain). Alimentaria (Madrid), 286,
85-90 (Spanish) 1997. CODEN: ALMNEC. ISSN: 0300-5755. Publisher:
Alimentaria.

AB A ***food*** science study of ***L*** . ***meyenii*** ,
cultivated in the Andes region of ***Peru*** , was conducted to

discover the nutrients that would explain its nutritional importance in the pre-Columbian period and may favor its modern cultivation in this extreme climate. The compns. of the yellow, red, and black varieties were, resp. (in wt.%): water, 18.34, 17.40, 20.42; lipids, 0.99, 0.76, 0.37; proteins, 6.616, 8.98, 12.86; fiber, 5.02, 6.00, 4.16; inorg. salts, 3.34, 3.52, 3.17; carbohydrates (by difference), 65.70, 63.34, 59.02. Fatty acid compns. (as percent of total acids), amino acid compns. (as mg/100 g protein), sugar compns. (as g %), and cation concns. (as mg %) are given. ***L***

meyenii was distinguished by high contents of palmitic, linolenic, and docosatetraenoic acids.

CC ***17-10*** (Food and Feed Chemistry)

Section cross-reference(s): 11

IT Dietary fiber

Lepidium ***meyenii***

(bromatol. studies on ***Lepidium*** ***meyenii***)

IT Amino acids, biological studies

Carbohydrates, biological studies

Cations

Fatty acids, biological studies

Lipids, biological studies

Mineral elements (biological)

Proteins (general), biological studies

(bromatol. studies on ***Lepidium*** ***meyenii***)

IT 50-99-7, D-Glucose, biological studies 57-10-3, Hexadecanoic acid,

biological studies 57-11-4, Octadecanoic acid, biological studies

57-48-7, D-Fructose, biological studies 57-50-1, biological

studies 58-86-6, D-Xylose, biological studies 60-33-3,

9,12-Octadecadienoic acid (Z,Z)-, biological studies 112-80-1,

Oleic acid, biological studies 112-85-6, Docosanoic acid

373-49-9, Palmitoleic acid 463-40-1 506-12-7, Heptadecanoic acid

506-17-2, (Z)-11-Octadecenoic acid 506-30-9, Eicosanoic acid

544-63-8, Myristic acid, biological studies 557-59-5, Lignoceric

acid 1002-84-2, Pentadecanoic acid 3615-41-6, Rhamnose

7429-90-5, Aluminum, biological studies 7432-41-9 7439-89-6,

Iron, biological studies 7439-95-4, Magnesium, biological studies

7439-96-5, Manganese, biological studies 7440-09-7, Potassium,

biological studies 7440-23-5, Sodium, biological studies

7440-50-8, Copper, biological studies 7440-66-6, Zinc, biological

studies 7440-70-2, Calcium, biological studies 7723-14-0,

Phosphorus, biological studies 28874-58-0 29204-02-2, Gadoleic

acid 29255-62-7

(bromatol. studies on ***Lepidium*** ***meyenii***)

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Set	Items	Description
S1	2144386	FOOD?
S2	2517	MACA OR MACAS OR MAKA OR MAKAS OR (LEPIDIUM? ? OR L) (2N) (M-EYENII? ? OR PERUVIANUM? ? OR CHACON? ?)
S3	19552	EGGWHITE? ? OR EGG? ? (2N) WHITE? ?
S4	4632147	WATER? OR H2O OR AQ? ? OR AQUEOUS?
S5	36585	PERU OR PERUVIAN? ?
S6	33456	RECIPE? ?
S7	0	S2 AND S3
S8	154	S2 AND S1
S9	16	S8 AND S4
S10	20	S8 AND S5
S11	0	S8 AND S6
S12	1	S9 AND S10
S13	34	(S9 OR S10) NOT S12
S14	31	RD S13 (unique items)

?t s12/7,de/all

12/7,DE/1 (Item 1 from file: 53)
DIALOG(R)File 53:FOODLINE(R): Food Science & Technology
(c) 2002 LFRA. All rts. reserv.

00903881 FOODLINE ACCESSION NUMBER: 577547
Effects of aqueous extract from *Lepidium meyenii* on mouse behaviour in forced swimming test.
Zheng B L; He K; Hwang Z Y; Lu Y; Tan S J; Kim C H; Zheng Q Y
Quality management of nutraceuticals: proceedings of a symposium, Washington D.C., August 2000. 258-268 (7 ref.)
Ho C -T; Zheng Q Y
American Chemical Society
PUBLISHER: ACS, Washington D.C.

2002

ISBN NO: 0-8412-3773-5

CLASSIFICATION: 616-056.4:658.56

LANGUAGE: English

DOCUMENT TYPE: Book; Conference paper

FOODLINE UPDATE CODE: 20020322

ABSTRACT: Maca (*Lepidium meyenii*), a plant that grows in the Andes of Peru, is used for nutritional and medicinal purposes. It is used to treat women with menopausal symptoms and to enhance fertility and sexual performance. A forced swimming test followed by measurements of serum lactic acid, lactate dehydrogenase and malonic aldehyde (MDA) was used to evaluate the energy enhancement properties of aqueous extracts of maca, MacaForce, in mice. The swim time increased in mice supplemented with maca in a dose dependent manner. Lactate dehydrogenase activity increased and serum lactic acid and MDA concentrations decreased in supplemented mice. The extract significantly enhanced motor tolerance and relieved fatigue in mice.

SECTION HEADING: FUNCTIONAL FOODS

DESCRIPTORS: DIETARY SUPPLEMENTS; DIETETIC FOODS; DRUGS; ENERGY; EXTRACTS; FATIGUE; FUNCTIONAL FOODS; HERBAL DRUGS; MACA; PLANT EXTRACTS

?t s14/7,de/all

14/7,DE/1 (Item 1 from file: 10)

DIALOG(R)File 10:AGRICOLA

(c) format only 2002 The Dialog Corporation. All rts. reserv.

3955680 23244015 Holding Library: AGL

Maca (*Lepidium meyenii* Walp.; Brassicaceae): a nutritious root crop of the Central Andes

Ochoa, C. Ugent, D.

Bronx, N.Y. : New York Botanical Garden.

Economic botany. July/Sept 2001. v. 55 (3) p. 344-345.

ISSN: 0013-0001 CODEN: ECBOA5

DNAL CALL NO: 450 Ec7

Language: English

Includes references

Place of Publication: New York

Subfile: IND; OTHER US (NOT EXP STN, EXT, USDA; SINCE 12/76);

Document Type: Article

DESCRIPTORS: lepidium meyenii; root crops; nutritive value; altitude; domestication; varieties; wild plants; color; food preparation; drying; baking; cooking; fermented foods;

14/7,DE/2 (Item 2 from file: 10)

DIALOG(R)File 10:AGRICOLA

(c) format only 2002 The Dialog Corporation. All rts. reserv.

3375680 20399179 Holding Library: AGL

Chemical composition of *Lepidium meyenii*

Dini, A. Migliuolo, G.; Rastrelli, L.; Saturnino, P.; Schettino, O.

Essex : Elsevier Applied Science Publishers.

Food chemistry. 1994. v. 49 (4) p. 347-349.

ISSN: 0308-8146 CODEN: FOCHDJ

DNAL CALL NO: TX501.F6

Language: English

Includes references

Place of Publication: England

Subfile: IND; OTHER FOREIGN;

Document Type: Article

Lepidium meyenii Walpers, a tuber of Andine origin still cultivated in Peru for local preparation, was studied. The carbohydrate, lipid, protein, fibre and also the amino-acid, fatty acid, mineral and sterol fractions were determined. The results show that the tuber is nutritionally interesting. Alkaloid-like compounds were also found. It is concluded that this tuber can be a food source in countries, where economic and technological conditions are inadequate to combat malnutrition.

DESCRIPTORS: *lepidium meyenii*; nutrient content; food composition; amino acids; fatty acids; sterols; mineral content;

14/7,DE/3 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

13186894 BIOSIS NO.: 200100394043

Occurrence of patulin in apple juice by high-performance liquid chromatography.

ORIGINAL LANGUAGE TITLE: Ocorrencia de patulina em suco de maca por cromatografia liquida de alta eficiencia.

AUTHOR: Prado Guilherme(a); de Oliveira Marize S; da Cunha Mariem R; Gomides Maria de Fatima; Abrantes Fabiana M; dos Santos Luciana G; Veloso Thais; de S Barroso Rita E

AUTHOR ADDRESS: (a)Rua Conde Pereira Carneiro, 80. Gameleira, Belo Horizonte, MG: gui@funed.mg.gov.br**Brazil

JOURNAL: Revista do Instituto Adolfo Lutz 59 (1-2):p21-25 2000

MEDIUM: print

ISSN: 0073-9855

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: Portuguese; Non-English

SUMMARY LANGUAGE: English; Portuguese

ABSTRACT: Patulin is a mycotoxin produced by several species of moulds (*Penicillium*, *Aspergillus* and *Bissochlamys*), but mainly by the apple-rotting fungus *Penicillium expansum*. Patulin is a highly toxic compound that has been shown to be mutagenic, carcinogenic and teratogenic in experiments with animals. The patulin content of apple juice is a good indicator of the quality of the apples used in the process. Thirteen brands were collected from retail markets in the city of Belo Horizonte, state of Minas Gerais, Brazil, between March and September 1999. A rapid reversed-phase liquid chromatographic determination of patulin was used. Patulin was extracted with ethyl acetate and the extract was cleaned up by partition with sodium carbonate solution. The identification and quantification of patulin was determined by C18 reversed phase column (3 μ m) and a variable-wavelength UV-VIS detector set at 278 nm. Patulin and 5-hydroxymethylfurfural were completely resolved by using 0,8% tetrahydrofuran in water containing 0,02% sodium azide as the mobile phase at a flow rate of 0,5 mL/min. The detection limit was <5 μ g/L. Average recoveries greater than 73% of patulin and coefficients of variation of less than 7% were obtained. Patulin was detected in only one sample (10 μ g/L). Although the incidence of patulin in apple juice in the present study was low, Brazilian health authorities should continue monitoring these products.

REGISTRY NUMBERS: 149-29-1: PATULIN

DESCRIPTORS:

MAJOR CONCEPTS: Foods; Methods and Techniques; Toxicology

BIOSYSTEMATIC NAMES: Fungi--Plantae

ORGANISMS: fungi (Fungi)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Fungi; Microorganisms;
Nonvascular Plants; Plants
CHEMICALS & BIOCHEMICALS: patulin--food occurrence analysis, food
residue, mycotoxin
METHODS & EQUIPMENT: reversed-phase high performance liquid
chromatography--analytical method
MISCELLANEOUS TERMS: apple juice--beverage, chemical analysis,
toxicological analysis; methodology
2000

14/7,DE/4 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

12749429 BIOSIS NO.: 200000503052
Vitamin content and antioxidant activity of extracts of introduced
vegetables plants.
AUTHOR: Gins M S; Lozovskaya E L; Gins V K; Kononkov P F; Tkacheva T V
JOURNAL: Doklady Rossiiskoi Akademii Sel'skokhozyaistvennykh Nauk (3):p
14-15 May, 2000
MEDIUM: print
ISSN: 1068-3674
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Russian; Non-English
SUMMARY LANGUAGE: English; Russian

ABSTRACT: Biochemical composition and antioxidant activity of introduced
plants, namely amarant, maca, watercress and vegetable chrysanthemum were
studied. High content of ascorbic acid, carotenoids and flavanoids was
found in the leaves of the plkants; amarant also contained alkaloid
amarantin. Antioxidant efficiency of the vegetable plants was studied
using the photochemiluminescence technique, which is based on the
influence of plant extracts on the yield of glycytryptophan
chemiluminescence in aqueous solution. All the extracts studied showed
antioxidant activity. The introduced vegetable plants can be used as
material for production of natural food supplements

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics
BIOSYSTEMATIC NAMES: Angiospermae--Spermatophyta, Plantae; Compositae--
Dicotyledones, Angiospermae, Spermatophyta, Plantae; Cruciferae--
Dicotyledones, Angiospermae, Spermatophyta, Plantae
ORGANISMS: amarant (Cruciferae); maca (Cruciferae); vegetable
chrysanthemum (Compositae); vegetable plant (Angiospermae); watercress
(Cruciferae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants
CHEMICALS & BIOCHEMICALS: extracts--antioxidant activity, vitamin
content; vitamin--content
2000

14/7,DE/5 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

11223565 BIOSIS NO.: 199800004897

Bromatological study of maca (*Lepidium meyenii*).

AUTHOR: Comas M(a); Miquel X(a); Arias G; De La Torre M C(a)

AUTHOR ADDRESS: (a)Nutr. Bromatol., Univ. Barcelona, Barcelona**Spain

JOURNAL: Alimentaria 35 (286):p85-90 October, 1997

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: Spanish; Non-English

SUMMARY LANGUAGE: Spanish; English

ABSTRACT: We present the food science study of the "maca or paca" cultivated in the Andes region of Peru, in order to find out which are the nutrients that can explain its nutritional importance, which has been admitted in the precolombian period. Nowadays, this plant wants to be claimed and exploited as a native plant which has been cultivated in extreme climate where they preferably grow.

DESCRIPTORS:

MAJOR CONCEPTS: Foods

BIOSYSTEMATIC NAMES: Cruciferae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: *Lepidium meyenii* {maca} (Cruciferae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants; Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: nutrients

METHODS & EQUIPMENT: bromatological study--assessment method

GEOGRAPHICAL NAME: Peru (South America, Neotropical region)--Andes region

MISCELLANEOUS TERMS: climate; maca--nutritional importance, produce 1997

14/7,DE/6 (Item 4 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

(c) 2002 BIOSIS. All rts. reserv.

09180797 BIOSIS NO.: 199497189167

Chemical composition of *Lepidium meyeri*.

AUTHOR: Dini A(a); Migliuolo G; Rastrelli L(a); Saturnino P; Schettino O

AUTHOR ADDRESS: (a)Dipartimento di Chimica delle Sostanze Naturali, Universita di Napoli 'Federico II', via D. Mont**Italy

JOURNAL: Food Chemistry 49 (4):p347-349 1994

ISSN: 0308-8146

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

maca

ABSTRACT: *Lepidium meyenii* Walpers, a tuber of Andine origin still cultivated in Peru for local preparation, was studied. The carbohydrate, lipid, protein, fibre and also the amino-acid, fatty acid, mineral and sterol fractions were determined. The results show that the tuber is nutritionally interesting. Alkaloid-like compounds were also found. It is concluded that this tuber can be a food source in countries, where economic and technological conditions are inadequate to combat malnutrition.

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Foods; Methods and Techniques; Morphology; Nutrition

BIOSYSTEMATIC NAMES: Cruciferae--Dicotyledones, Angiospermae, Spermatophyta, Plantae; Hominidae--Primates, Mammalia, Vertebrata,

Chordata, Animalia; Plantae-Unspecified--Plantae
ORGANISMS: plant (Plantae - Unspecified); Hominidae (Hominidae); Lepidium
meyerii (Cruciferae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; animals;
chordates; dicots; humans; mammals; plants; primates; spermatophytes;
vascular plants; vertebrates
MISCELLANEOUS TERMS: FOOD CHEMISTRY; FOOD PRODUCTS; HUMAN NUTRITION;
MACA; METHODS; TUBER

1994

14/7,DE/7 (Item 1 from file: 50)
DIALOG(R)File 50:CAB Abstracts
(c) 2002 CAB International. All rts. reserv.

03983577 CAB Accession Number: 20003000949

Nutritional evaluation of *Lepidium meyenii* (Maca) in albino mice and their descendant.

Original Title: Evaluacion nutricional de *Lepidium meyenii* (Maca) en ratones albinos y su descendencia.

Canales, M.; Aguilar, J.; Prada, A.; Marcelo, A.; Huaman, C.; Carbajal, L.

Instituto de Medicina Tropical "Alexander von Humboldt" y Universidad Peruana Cayetano Heredia, Lima, Peru.

Archivos Latinoamericanos de Nutricion vol. 50 (2): p.126-133

Publication Year: 2000

ISSN: 0004-0622 --

Language: Spanish Summary Language: english

Document Type: Journal article

The Maca (*Lepidium meyenii*) is a Peruvian hypocotyl that grows exclusively on the Peruvian Andes. Traditionally it is attributed nutritional, energizing, fertilizing properties among others. With the purpose to evaluate scientifically the nutritional property of Maca, a controlled study in two generations of albino Swiss mice (parents and breeding) was conducted. The parents were assigned to 1 of 3 nutritional schedules. The food of each group was prepared based on powder from a commercial balanced food (CBF) of which 30% was replaced by raw or cooked Maca according to the corresponding group or pure CBF in the control group. The groups - (1) Raw Maca Group; (2) Cooked Maca Group; and, (3) Control Group. The results showed that the curves of growth were similar and adequate for the three groups. However, the cooked Maca group showed the best curve. These data were better observed in the second generation of animals, with significant differences. The CBF group had a better growth than raw Maca group. No signs of malnutrition nor overweight were observed in the groups. The serum values of total proteins and albumin were superior for the mice eating cooked Maca than of the raw Maca and CBF groups. This study demonstrates one of the traditionally attributed properties of Maca, the nutritional capability. 38 ref.

DESCRIPTORS: animal models; foods; root vegetables; nutritive value;
growth; nutritional state; blood chemistry; protein
ORGANISM DESCRIPTORS: mice; *lepidium meyenii*

14/7,DE/8 (Item 2 from file: 50)
DIALOG(R)File 50:CAB Abstracts
(c) 2002 CAB International. All rts. reserv.

03043614 CAB Accession Number: 951607137

Sources of tomato germplasm adaptable to the hot summer season in India.

Umesh Chandra; Thomas, T. A.
National Bureau of Plant Genetic Resources, Pusa Campus, New Delhi 110 012, India.

Adaptation of food crops to temperature and water stress: proceedings of an international symposium, Taiwan, 13-18 August 1992.

Conference Title: Adaptation of food crops to temperature and water stress: proceedings of an international symposium, Taiwan, 13-18 August 1992.

p.501-502

Publication Year: 1993

Editors: Kuo, C. G.

Publisher: AVRDC -- Taipei, Taiwan

ISBN: 92-9058-081-X

Language: English

Document Type: Conference paper

The National Bureau of Plant Genetic Resources has assembled about 2900 lines of tomato, including wild species such as *Lycopersicon pimpinellifolium*, *L. hirsutum*, *L. peruvianum*, *L. cheesmanii* (*L. cheesmanii*), *L. pissisi*, *L. glandulosum*, *L. chilense* and *L. esculentum* var. *cerasiforme*. Results are discussed of a field evaluation of accessions for heat and drought tolerance during the hot summers (Tmax 38-42 deg C) of 1990-92. 6 ref.

DESCRIPTORS: tomatoes; wild relatives; field experimentation; evaluation; heat stress; heat resistance; water stress; drought resistance; tolerance; plant genetic resources

ORGANISM DESCRIPTORS: *Lycopersicon pimpinellifolium*; *Lycopersicon hirsutum*; *Lycopersicon peruvianum*; *Lycopersicon cheesmanii*; *Lycopersicon*

GEOGRAPHIC NAMES: India

14/7,DE/9 (Item 3 from file: 50)
DIALOG(R)File 50:CAB Abstracts
(c) 2002 CAB International. All rts. reserv.

02977171 CAB Accession Number: 952301353

Downy mildew of maca (*Lepidium meyenii*): symptoms and identification of the causal agent.

Original Title: Tizon velloso de la maca (*Lepidium meyenii*): sintomas e identificacion del agente causal.

Icochea, T.; Torres, H.; Perez, W.

Centro Intenacional de la Papa (CIP), Aptdo. 1558, Lima, Peru.

Fitopatologia vol. 29 (2): p.156-159

Publication Year: 1994

ISSN: 0430-6155 --

Language: Spanish Summary Language: english

Document Type: Journal article

Peronospora parasitica was identified as the causal agent of downy mildew on *L. meyenii* grown in the central Andes region of Peru for food and medicinal purposes. Symptoms were reproduced by reinoculations. 6 ref.

DESCRIPTORS: root vegetables; medicinal plants; plant diseases; plant pathogens; plant pathogenic fungi; root crops; plant pathology

ORGANISM DESCRIPTORS: *Lepidium meyenii*; *Peronospora parasitica*; fungi

GEOGRAPHIC NAMES: Peru

14/7,DE/10 (Item 4 from file: 50)

DIALOG(R)File 50:CAB Abstracts
(c) 2002 CAB International. All rts. reserv.

02970426 CAB Accession Number: 951402433
Andean crops and infant nourishment.
Repo-Carrasco, R.
Report - Institute of Development Studies, University of Helsinki (No. B
25): 133 pp.
Publication Year: 1992
ISSN: 0359-9493
Publisher: Institute of Development Studies, University of Helsinki --
Helsinki, Finland
Language: English
Document Type: Miscellaneous

The aims of this study were: to develop blends of flour with a high nutritional value, based on Andean crops, for weaning children and pre-school age children; to establish the nutritional value of such products, through chemical analysis and biological tests; and to produce these blends at a small scale enterprise level, introducing the products into the diets of the population in low-income sectors. Part 1 contains general information concerning the background, geographic environment and agronomic characteristics of Andean crops and Part 2 contains details of the studies. A variety of roots (*Canna edulis*, *Pachyrhizus ahipa*, *Arracacia xanthorrhiza*, *Lepidium meyenii*, *Mirabilis expansa*, *Plymnia sanchifolia*), tubers (*Tropaeolum tuberosum*, *Oxalis tuberosa*, *Ullucus tuberosus*), grains (*Chenopodium pallidicaule*, *Amaranthus caudatus*, *Chenopodium quinoa*), pulses (*Erythrina edulis*, *Phaseolus vulgaris*, *Lupinus mutabilis*), fruit (*Solanum quitoense*, *Physalis peruviana*, *Annona cherimola*, *Passiflora mollissima*, *Annona muricata*, *Pouteria lucuma*, *Borojo patinoi*, *Solanum muricatum*, *Cyphomandra betacea*, *Carica pentagona*, *Passiflora ligularis*, *Cereus triangularis*, *Rubus glaucus*) and nuts (*Parajubaea coccoides*, *Anacardium occidentale*, *Caryodendron orinocense*) are considered. 90 ref.

DESCRIPTORS: cereal grains; fruit; nuts; children; nutritive value;
weaning; foods; cherimoyas; tamarillos; cashews

ORGANISM DESCRIPTORS: *Canna edulis*; *Tropaeolum tuberosum*; *Oxalis tuberosa*
; *Ullucus tuberosus*; *Chenopodium pallidicaule*; *Amaranthus caudatus*;
Chenopodium quinoa; *Phaseolus vulgaris*; *Lupinus mutabilis*; *Solanum*
quitoense; *Physalis peruviana*; *Annona cherimola*; *Annona muricata*;
Pouteria lucuma; *Solanum muricatum*; *Cyphomandra betacea*; *hylocereus*
undatus; *Rubus glaucus*; *Anacardium occidentale*; man

GEOGRAPHIC NAMES: Andean group; South America; Peru

14/7,DE/11 (Item 1 from file: 53)
DIALOG(R)File 53:FOODLINE(R): Food Science & Technology
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00905236 FOODLINE ACCESSION NUMBER: 578475
Compositions and methods for their preparation from *Lepidium*.
Zheng B L; Kim C H; Wolthoff S; He K; Rogers L; Shao Y; Zheng Q Y
PATENT ASSIGNEE: Pure World Botanicals Inc
PATENT: EP 1180006 A2
PATENT: WO 0051548 DATE:8.9.2000
APPLICATION COUNTRY: US (DATE(S):3.3.1999)
PRIORITY APPLICATION DATE: 3.3.2000
DESIGNATED STATES:

SeepublishedpatentdocumentforDesignatedContractingStates.
X-REFERENCE: FUNCTIONAL FOODS

LANGUAGE: English

DOCUMENT TYPE: Patent

FOODLINE UPDATE CODE: 20020404

ABSTRACT: *Lepidium meyenii* (maca or Peruvian ginseng) and other species of *Lepidium* have been found to have biologically active components. These include glycosinolates, benzyl isothiocyanate, fatty acid amides, plant sterols, and polysaccharides. This patent application discloses pharmaceutical uses for *Lepidium* extracts, including treatment for cancer or infertility.

SECTION HEADING: FUNCTIONAL FOODS

DESCRIPTORS: BT HERBAL DRUGS; DRUGS; ESSENCES; EUROPEAN PATENT; EXTRACTS; HERB EXTRACTS; MEDICAL TREATMENT; PATENT; PERUVIAN GINSENG; PLANT EXTRACTS

14/7,DE/12 (Item 2 from file: 53)

DIALOG(R)File 53:FOODLINE(R): Food Science & Technology
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00903863 FOODLINE ACCESSION NUMBER: 577529

Quality management of nutraceuticals: proceedings of a symposium,
Washington D.C., August 2000.

Ho C -T; Zheng Q Y

American Chemical Society

327pp

PUBLISHER: ACS, Washington D.C.

GBP60

2002

ISBN NO: 0-8412-3773-5

CLASSIFICATION: 616-056.4:658.56

SERIES: ACS Symposium Series No.803

LANGUAGE: English

DOCUMENT TYPE: Book; Conference proceedings

FOODLINE UPDATE CODE: 20020322

ABSTRACT: This book contains 21 papers relating to quality management of nutraceuticals: 'Quality management of nutraceuticals: intelligent product-deliver systems and safety through traceability'; 'The 6S(TM) quality management of nutraceuticals: an operating principle at Pharmanex'; 'Analysis of flavonoids in botanicals'; 'Analysis of anthocyanins in nutraceuticals'; 'Role of marker compounds of herbs and their bioavailability in quality, efficacy, and safety of products'; 'Quality management of marine nutraceuticals'; 'Species identification of black cohosh by LC-MS for quality control'; 'Modern analytical approaches in quality control of black cohosh'; 'Systematic investigation on quality management of saw palmetto products'; 'Chemical components in noni fruits and leaves (*Morinda citrifolia* L.); 'Analysis and standardization of cranberry products'; 'Extraction of antioxidants from grape seeds employing pressurized fluids'; 'Analysis of polyphenol constituents in cocoa and chocolate'; 'A quantitative HPLC method for the quality assurance of goldenseal products in the U.S. market'; 'Analytical methods for the active components in tea products'; 'Antioxidants in ginger family'; 'Dietary phytoestrogens: safety, nutritional quality, and health considerations'; 'Effect of aqueous extract from *Lepidium meyenii* on mouse behavior in forced swimming test'; 'Bioactive homisoflavones from Vietnamese coriander or pak pai (*Polygonatum odoratum*)'; 'Analysis of bioactive ferulates from gum guggul (*Commiphora wightii*)'; 'Antioxidant activity of flavanols and flavonoid glycosides in oolong tea.

SECTION HEADING: OLD MATERIAL

DESCRIPTORS: ANALYSIS; ANTHOCYANINS; ANTIOXIDANTS; AROMATIC COMPOUNDS;

AVAILABILITY; BEVERAGES; BIOACTIVE COMPOUNDS; BIOAVAILABILITY;
BIOMARKERS; BLACK COHOSH; CHEMICAL MARKERS; CHOCOLATE; CHOCOLATE
CONFECTIONERY; CHROMATOGRAPHY; COCOA; COCOA PRODUCTS; CONFECTIONERY
; CRANBERRY PRODUCTS; EXTRACTS; FLAVANOLS; FLAVONOID GLYCOSIDES;
FLAVONOIDS; FUNCTIONAL FOODS; GINGER; GLYCOSIDES; GOLDENSEAL
PRODUCTS; GOOD MANUFACTURING PRACTICE; GRAPE SEEDS; GUM GUGGUL;
HEALTH; HERBS; HOMOISOFLAVONES; HPLC; INGREDIENTS; LIQUID
CHROMATOGRAPHY; NON ALCOHOLIC BEVERAGES; NONI; OOLONG TEA; PHENOLS;
PHYTOESTROGENS; PLANT EXTRACTS; POLYPHENOLS; QUALITY ASSURANCE;
QUALITY CONTROL; SAFETY; SAW PALMETTO; SPICES; TEA; TEA PRODUCTS;
VIETNAMESE CORIANDER

14/7,DE/13 (Item 3 from file: 53)
DIALOG(R)File 53:FOODLINE(R): Food Science & Technology
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00889911 FOODLINE ACCESSION NUMBER: 563588
Extract of *Lepidium meyenii* roots for pharmaceutical applications.
Zheng B L; Kim C H; Wolthoff S; He K; Rogers L; Shao Y; Zheng Q Y
PATENT ASSIGNEE: Pure World Botanicals Inc
PATENT: US 6267995 B
PRIORITY APPLICATION DATE: 3.3.1999
NOTES: Date of publication: 31.7.2001
X-REFERENCE: FUNCTIONAL FOODS
LANGUAGE: English
DOCUMENT TYPE: Patent
FOODLINE UPDATE CODE: 20010925
ABSTRACT: *Lepidium meyenii* (maca or Peruvian ginseng) and other species of
Lepidium have been found to have biologically active components. These
include glycosinolates, benzyl isothiocyanate, fatty acid amides, plant
sterols, and polysaccharides. This patent application discloses uses
for *Lepidium meyenii* root extracts, including treatment for cancer and
sexual dysfunction.
SECTION HEADING: FUNCTIONAL FOODS
DESCRIPTORS: DRUGS; ESSENCES; EXTRACTS; HERB EXTRACTS; HERBAL DRUGS;
MEDICAL TREATMENT; PATENT; PERUVIAN GINSENG; PLANT EXTRACTS; US
PATENT

14/7,DE/14 (Item 4 from file: 53)
DIALOG(R)File 53:FOODLINE(R): Food Science & Technology
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00688364 FOODLINE ACCESSION NUMBER: 456429
Study of the 'maca' or 'paca' (*Lepidium meyenii*).
Comas M; Miquel X; Arias G; de la Torre M C
Alimentaria (October), 35 (286), 85-90 (13 ref.)
1997
ISSN NO: 0300-5755
LANGUAGE: Spanish
SUMMARY LANGUAGE: English
DOCUMENT TYPE: Journal article
FOODLINE UPDATE CODE: 19971202
ABSTRACT: The maca is a tuberous plant of the family Cruciferae, which
grows at altitudes of up to 4,450 m in the Andes and is a traditional
food of the native population. The part that is eaten is the
hypocotyl, which can be boiled, roasted or dried. Various health
benefits, including longevity, are attributed to the maca. This
article describes the composition of the maca and discusses its

nutritional value.

SECTION HEADING: FRUIT AND VEGETABLE PRODUCTS

DESCRIPTORS: COMPOSITION; MACA; NUTRIENTS; NUTRITIONAL VALUE; PERU;
PROXIMATE COMPOSITION; TUBERS; VEGETABLES

14/7,DE/15 (Item 1 from file: 94)

DIALOG(R)File 94:JICST-EPlus

(c)2002 Japan Science and Tech Corp(JST). All rts. reserv.

01719832 JICST ACCESSION NUMBER: 93A0177213 FILE SEGMENT: JICST-E
Host Selective Suppression by Water-Soluble Glucans from Phytophthora spp.
of Hypersensitive Cell Death of Suspension-Cultures Cells from Some
Solanaceous Plants Caused by Hyphal Wall Elicitors of the Fungi.
SANCHEZ L M (1); OHNO Y (1); MIURA Y (1); KAWAKITA K (1); DOKE N (1)
(1) Nagoya Univ., Nagoya, JPN
Nippon Shokubutsu Byori Gakkaiho(Annals of the Phytopathological Society of
Japan), 1992, VOL.58,NO.5, PAGE.664-670, FIG.5, TBL.1, REF.15
JOURNAL NUMBER: F0893AAF ISSN NO: 0031-9473 CODEN: NSBGA
UNIVERSAL DECIMAL CLASSIFICATION: 632.4 635.1/.8
LANGUAGE: English COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

ABSTRACT: The suppressor action of water-soluble glucans(WSG) isolated from
Phytophthora capsici, P.infestans and P.nicotianae var. nicotianae on
hypersensitive cell death caused by elicitors was investigated using
suspension-cultured of tomato(Lycopersicon esculentum Mill.,
L.peruvianum), sweet pepper(Capsicum frutescence L.) and
tobacco(Nicotiana tabacum L.). The hypersensitive cell death was caused
by elicitor of hyphal wall components(HWC) both from pathogenic and
nonpathogenic Phytophthora spp. and depended on the concentration of
the elicitor and duration of treatment. On the other hand, the WSG from
respective species of Phytophthora suppressed the elicitor-induced cell
death in the manner of host selectivity: the suppressor activity was
specific only to its typical host(i.e., P.capsici for sweet pepper,
P.infestans for tomato and P.nicotianae var. nicotianae for tobacco)
and the common host(tomato). These results suggest that WSG from the
above Phytophthora spp. may be involved in the determination of
host-selectivity for the establishment of compatible interaction with
their respective host plants. (author abst.)

DESCRIPTORS: Phytophthora; tomato; Capsicum annum var.grossum; Nicotiana
tabacum; plant pathogenic microbe; glucan; cultured cell; host;
bioactive factor; cell death; Phytophthora rot

BROADER DESCRIPTORS: Peronosporales; Oomycetes; Mastigomycotina; Eumycetes;
fungus; microorganism; fruit vegetable; vegetable; garden crop;
crop(agriculture); agricultural food; food; Lycopersicon; Solanaceae;
Solanales; Gamopetalae; Dicotyledoneae; Angiospermae; Phanerogamae;
plant(organism); Capsicum; stimulant plant; industrial plant; Nicotiana
; glucoside; glycoside; polysaccharide; carbohydrate; cell(cytology);
factor; cell physiology; death; plant disease

14/7,DE/16 (Item 2 from file: 94)

DIALOG(R)File 94:JICST-EPlus

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00594010 JICST ACCESSION NUMBER: 88A0234881 FILE SEGMENT: JICST-E
Efficient ovule culture for the hybridization of Lycopersicon esculentum
and L. peruvianum, L. glandulosum.

IMANISHI S (1)

(1) Yamagata Univ., Tsuruoka, JPN

Jpn J Breed, 1988, VOL.38, NO.1, PAGE.1-9, FIG.1, TBL.3, REF.18

JOURNAL NUMBER: Y0311AAD ISSN NO: 0536-3683

UNIVERSAL DECIMAL CLASSIFICATION: 635.1/.8 631.527/.528

LANGUAGE: English COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

ABSTRACT: Ovules (undeveloped seeds) unable to mature were taken out from the ripe fruits which were obtained by cross-pollination between *L. esculentum* as female parent and *L. peruvianum* or *L. glandulosum* as male parent. After the jelly-like coatings covering the ovules were removed by washing sufficiently with tap water, the ovules were treated with a 2% sterile antifornin solution for 6 to 12min. After washing several times with sterilized water, the ovules were plated onto MS agar medium (MURASHIGE and SKOOG, 1962) without phytohormone. The number of ovules germinated per fruit in each combination of the F1 and BC1 hybrids was as follows; 0.79 in "Kyoryoku Toko"**L. glandulosum*, 0.48 in "Kyoryoku Toko"*F1 ("*Kyoryoku Toko*"**L. glandulosum*), 0.76 in "Early Pink*the same F1, 1.55 in "Kyoryoku Toko"*F1 ("*Kyoryoku Toko*"**L. peruvianum*). In all the crosses, about 80% of the germinated ovules grew up to normal plants and most of them were found to be true hybrids by the observation of morphological traits. Thus, each fruit contained about one ovule which was able to germinate when it was cultured in vitro. Furthermore, such an ovule capable of germination could be distinguished from others with a high probability, as its size fell into a limited range and it displayed a characteristic color and shape. Based on these results the in vitro ovule culture is considered to be a convenient and effective method for the production of F1 and BC1 hybrids between *L. esculentum* and *L. peruvianum* or *L. glandulosum*. On the other hand, the choice of a female parent is also considered to be a main factor in the performance of the cross.(author abst.)

DESCRIPTORS: tomato; cultivar; wild type; interspecific hybrid; tissue culture; F1 hybrid; germination; breed specificity; plant breeding; hybridization breeding

BROADER DESCRIPTORS: fruit vegetable; vegetable; garden crop; crop(agriculture); agricultural food; food; Lycopersicon; Solanaceae; Solanales; Gamopetalae; Dicotyledoneae; Angiospermae; Phanerogamae; plant(organism); breed; hybrid; culture(biology); incubate; developmental physiology; biological comparison; comparison; breeding(genetics)

14/7,DE/17 (Item 3 from file: 94)

DIALOG(R)File 94:JICST-EPlus

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00287763 JICST ACCESSION NUMBER: 86A0410378 FILE SEGMENT: JICST-E

A simple and efficient method for the interspecific hybridization between *Lycopersicon esculentum* and *L. peruvianum*.

IMANISHI SHIGERU (1); WATANABE YOSHIYUKI (1); HIURA IWA0 (1)

(1) Yamagata Univ., Faculty of Agriculture

Yamagata Norin Gakkaiho(Journal of the Yamagata Agriculture and Forestry Society), 1985, NO.42, PAGE.13-15, TBL.1, REF.8

JOURNAL NUMBER: G0697AAG ISSN NO: 0372-7785 CODEN: YNGKA

UNIVERSAL DECIMAL CLASSIFICATION: 635.1/.8 631.527/.528

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Short Communication

MEDIA TYPE: Printed Publication

ABSTRACT: In order to obtain F1 hybrid between *Lycopersicon esculentum* and *L. peruvianum*, undeveloped seeds which are incapable to be mature were taken out from the matured fruits that had been artificially crossed between the cross combination. The undeveloped seeds were removed from jelly-like substance by washing sufficiently with tap water and sterilized in 2% antiformin solution for 6 to 12 minutes. Afterwards, the sterilized undeveloped seeds which were washed several times in sterilized water were transplanted onto the agar medium that contained MS basal components without phytohormones. In the combination of tomato cultivar "Kyoryoku Toko" and *L. peruvianum*, 15 out of 162 undeveloped seeds were germinated within 10 days after transplanting. The next year, plants which were raised from the undeveloped seeds were observed on morphological traits and confirmed to be true F1 plants. The method mentioned above of hybridization between tomato and *L. peruvianum* is thought that it is an easier and more efficient method than published methods so far for the hybridization. This method could be very useful for tomato breeders to have an attempt to introduce genes of the wild species into tomato cultivar. (author abst.)

DESCRIPTORS: Solanaceae; hybridization(mating); hybrid; tomato; disease resistance; plant breeding; hybridization breeding; seed; sterilization(disinfection); medium(culture); seeding(sowing)

BROADER DESCRIPTORS: Solanales; Gamopetalae; Dicotyledoneae; Angiospermae; Phanerogamae; plant(organism); mating; fruit vegetable; vegetable; garden crop; crop(agriculture); agricultural food; food; *Lycopersicon*; resistance(endure); breeding(genetics); plant organ; cultivation management; management

14/7,DE/18 (Item 1 from file: 144)

DIALOG(R)File 144:Pascal

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15254859 PASCAL No.: 01-0424026

Glucosinolate contents in maca (*Lepidium peruvianum* Chacon) seeds, sprouts, mature plants and several derived commercial products

GENYI LI; AMMERMANN Uwe; QUIROS Carlos E

Department of Vegetable Crops, University of California,, Davis, CA 95616 , United States; Institute of Agronomy and Plant Breeding, University of Goettingen, von Siebold Str. 8, 37075 Goettingen, Germany

Journal: Economic botany, 2001, 55 (2) 255-262

ISSN: 0013-0001 CODEN: ECBOA5 Availability: INIST-4064; 354000096990840070

No. of Refs.: 23 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English Summary Language: Spanish

Several products derived from processed maca hypocotyls (*Lepidium peruvianum* Chacon, previously known as *L. meyenii* Walp.) were surveyed for glucosinolate content and quantified by HPLC analysis. These included pills, capsules, flour, liquor, tonic and mayonnaise. Different plant organs such as fresh hypocotyls and leaves, seeds, dry hypocotyls, and sprouts were also included in the survey. The most abundant glucosinolates detected in fresh and dry hypocotyls and leaves were the aromatic glucosinolates, benzylglucosinolate (glucotropaeolin) and p-methoxybenzylglucosinolate. Maca seeds and sprouts differed in profile from hypocotyls and leaves due to the modification of benzylglucosinolate. No glucosinolates were detected in liquor and tonic, while mayonnaise had only trace amounts of those glucosinolates. It had instead allylglucosinolate (sinigrin), which is an aliphatic glucosinolate. The pills, capsules and flour had the

same glucosinolates as those observed in hypocotyls, but in variable amounts. The richest sources of glucosinolates were seeds, fresh hypocotyls and sprouts, in that order.

English Descriptors: Health food; Seeds; Shoot; Plant leaf; Hypocotyl; Biochemical analysis; HPLC chromatography; Quality criterion; Commercial form; Secondary metabolism; Glucosinolate; Food supplement; Anticarcinogen; Organic isothiocyanate; Peru; Markets

French Descriptors: Aliment sante; Graine; Pousse plante; Feuille vegetal; Hypocotyle; Analyse biochimique; Chromatographie HPLC; Criterie qualite; Forme commerciale; Metabolisme secondaire; Glucosinolate; Complement alimentaire; Anticarcinogene; Isothiocyanate organique; Perou; Marche; *Lepidium peruvianum*

Spanish Descriptors: Alimentos sanos; Semillas; Brote planta; Hoja vegetal; Hipocotilo; Analisis bioquimico; Cromatografia HPLC; Criterio calidad; Forma comercial; Metabolismo secundario; Glucosinolato; Complemento alimentario; Anticarcinogeno; Isotiocianato organico; Peru; Mercado

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14/7,DE/19 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal
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13227852 PASCAL No.: 97-0495360
Estudio bromatologico de la Maca o Paca (*Lepidium meyenii*)
(Chemical composition of "maca or paca" (*Lepidium meyenii*))
COMAS M; MIQUEL X; ARIAS G; DE LA TORRE M C
Nutricion y Bromatologia. Universidad de Barcelona, Spain; Universidad S. Marcos, Lima, Peru
Journal: Alimentaria, 1997 (286) 85-90
ISSN: 0300-5755 CODEN: ALMNEC Availability: INIST-21624;
354000068284960110
No. of Refs.: 13 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: Spain
Language: Spanish Summary Language: English
We present the food science study of the "maca or paca" cultivated in the Andes region of Peru, in order to find out which are the nutrients that can explain its nutritional importance, which has been admitted in the precolombian period

English Descriptors: Chemical composition; Nutritive value; Quantitative analysis; Qualitative analysis; Vegetable; Peru
French Descriptors: Composition chimique; Valeur nutritive; Analyse quantitative; Analyse qualitative; Legume; Perou; *Lepidium meyenii*; Maca

Spanish Descriptors: Composicion quimica; Valor nutritivo; Analisis cuantitativo; Analisis cualitativo; Legumbre; Peru

Other Descriptors: Chemische Zusammensetzung; Quantitative Analyse; Qualitative Analyse; Peru

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14/7,DE/20 (Item 3 from file: 144)

DIALOG(R) File 144:Pascal
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12979863 PASCAL No.: 97-0257799

Discriminative stimulus effects of ethanol and 3 alpha -hydroxy-5 alpha -pregnan-20-one in relation to menstrual cycle phase in cynomolgus monkeys (*Macaca fascicularis*)

Mechanisms of action of drugs: concordance between studies with laboratory animals and humans

GRANT K A; AZAROV A; SHIVELY C A; PURDY R H

PRESTON Kenzie, ed; DE WIT Harriet, ed

Department of Physiology and Pharmacology, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, NC 27157-1083, United States; Department of Comparative Medicine, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, NC 27157-1083, United States; Department of Psychiatry (151), San Diego Veterans Administration Medical Center, La Jolla, CA 92161, United States

National Institute on Drug Abuse, Intramural Research Program, P.O. Box 5180, Baltimore, MD 21224, United States; Department of Psychiatry, University of Chicago, MC 3077, 5841 S. Maryland Avenue, Chicago, IL 60637, United States

Journal: Psychopharmacologia, 1997, 130 (1) 59-68

ISSN: 0033-3158 Availability: INIST-1761; 354000065043290050

No. of Refs.: 1 p.1/4

Document Type: P (Serial) ; A (Analytic)

Country of Publication: Germany

Language: English

The present study was designed to characterize the discriminative stimulus effects of ethanol and the neurosteroid 3 alpha -hydroxy-5 alpha -pregnan-20-one (allopregnanolone) in nonhuman primates as a function of menstrual cycle phase. Female cynomolgus monkeys (*Macaca fascicularis*) were trained in a two-lever procedure to discriminate 1.0 g/kg ethanol (IG, 30 min pretreatment) from water using food reinforcement. A cumulative dosing procedure was used to assess changes in the potency of ethanol and an endogenous anxiolytic steroid in the follicular versus the luteal phase of the menstrual cycle. Plasma progesterone and allopregnanolone levels were determined within 24 h of testing to verify phase of menstrual cycle. The monkeys were more sensitive to the discriminative stimulus effects of ethanol and the ethanol-like effects of the endogenous neuroactive steroid allopregnanolone during the luteal phase of the menstrual cycle. These findings suggest that changes in the endogenous levels of ovarian-derived progesterone and allopregnanolone alter sensitivity to the discriminative stimulus effects of ethanol.

English Descriptors: Epipregnanolone; Neurohormone; Ethanol; Progesterone; Estrous cycle; Luteal phase; Animal; Monkey; Stimulus discrimination; Instrumental conditioning; Oral administration; Mechanism of action; Female; Progestagen; Sex steroid hormone; Ovarian hormone

French Descriptors: Epipregnanolone; Neurohormone; Ethanol; Progesterone; Cycle oestral; Phase luteale; Animal; Singe; Discrimination stimulus; Conditionnement instrumental; Voie orale; Mecanisme action; Femelle; Progestatif; Hormone steroide sexuelle; Hormone ovarienne

Spanish Descriptors: Epipregnanolona; Neurohormona; Etanol; Progesterona; Ciclo estral; Fase secretora; Animal; Mono; Discriminacion estimulo; Condicionamiento instrumental; Via oral; Mecanismo accion; Hembra; Progestageno; Hormona esteroide sexual; Hormona ovarica

Other Descriptors: Aethanol

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14/7,DE/21 (Item 4 from file: 144)
DIALOG(R)File 144:Pascal
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12639905 PASCAL No.: 96-0333616
Physiological studies and determination of chromosome number in Maca,
Lepidium meyenii (Brassicaceae)
QUIROS C F; EPPERSON A; HU J; HOLLE M
Department of Vegetable Crops, University of California, Davis, CA 95616,
United States
Journal: Economic botany, 1996, 50 (2) 216-223
ISSN: 0013-0001 CODEN: ECBOA5 Availability: INIST-4064;
354000044081190050
No. of Refs.: 10 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English Summary Language: Spanish

English Descriptors: Ecophysiology; Photoperiod; Edaphic factor; pH;
Cytogenetics; Chromosomic number; Meiosis; Chromosome pairing; Peru;
Andes

French Descriptors: Ecophysiologie; Photoperiode; Facteur edaphique; pH;
Cytogenetique; Nombre chromosomique; Meiose; Appariement chromosomique;
Perou; Andes; *Lepidium meyenii*

Spanish Descriptors: Ecofisiologia; Fotoperiodo; Factor edafico; pH;
Citogenetica; Numero cromosomico; Meiosis; Apareamiento cromosomico; Peru
; Andes

Other Descriptors: pH Wert; Peru

14/7,DE/22 (Item 1 from file: 203)
DIALOG(R)File 203:AGRIS
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02253060 AGRIS No: 1998-070090
[Effect of calcite and phosphate application on growth and yield of
peanut on acidic phosphate tidal areas] (Pengaruh pemberian kalsit dan
fosfat terhadap pertumbuhan dan hasil kacang tanah di lahan pasang surut
tanah sulfat masam)
Alwi, M.

[Research of food crops in swamp areas, book 1: breeding of
photoperiodically sensitive high yield swamp rice varieties and culture
technique improvement of legumes in swamp areas (Indonesia)] (Pembentukan
varietas unggul padi rawa peka fotoperiod dan perbaikan teknik budidaya
kacang-kacangan di lahan rawa pasang surut: buku 1 : hasil penelitian
tanaman pangan di lahan rawa)

Sabran, M.; Noor, I.; Jumberi, A.; Sjachrani, A. (eds)
Balai Penelitian Tanaman Pangan Lahan Rawa, Banjarbaru (Indonesia)
Publisher: Balittra, Banjarbaru (Indonesia), 1996, p. 79-86
ISBN: 979-8253-33-7

Notes: 6 tables; 12 ref.

Language: Indonesian Summary Language: Indonesian

Place of Publication: Indonesia

Document Type: Analytic, Monograph, Summmary

Journal Announcement: 2408 Record input by Indonesia

Tanah sulfat masam dicirikan oleh tingkat kemasaman tanah dan kelarutan Al tinggi serta tekstur tanah didominasi oleh liat. Dengan demikian tanah ini memiliki kemampuan besar untuk mengikat P tanah. Agar kacang tanah dapat tumbuh dan berproduksi dengan baik, maka diperlukan kalsit dan fosfat. Penelitian ini dilaksanakan di KP. Unit Tatas, Kabupaten Kapuas, Kalimantan Tengah dari bulan November 1995 hingga Maret 1996. Rancangan percobaan yang digunakan adalah Rancangan Acak Kelompok Faktorial dengan tiga ulangan. Sebagai faktor I adalah kalsit terdiri dari 0, 1 dan 2 t/ha, sedangkan faktor II adalah fosfat meliputi 0, 45, 90, 135 dan 180 kg P₂O₅/ha. Pupuk dasar terdiri dari Urea 23 kg N/ha dan 60 kg K₂O/ha. Hasil penelitian menunjukkan bahwa pemberian kalsit dan fosfat terlihat setelah memasuki fase generatif, yaitu pengaruhnya terhadap perbaikan kualitas komponen hasil dan hasil. Hasil kacang tanah optimum dicapai pada takaran 1 t/ha kalsit dan 90 kg P₂O₅/ha.

Descriptors in English: *ARACHIS HYPOGAEA; *PHOSPHATE FERTILIZERS; *CALCITE; *GROWTH PERIOD; *YIELDS; *TIDES; *INTERTIDAL ENVIRONMENT; *SOIL PH; *SOIL TESTING; *KALIMANTAN; AQUATIC ENVIRONMENT; ARACHIS; ASIA; DEVELOPMENTAL STAGES; ENVIRONMENT; FERTILIZERS; INDONESIA; LEGUMINOSAE; MARINE ENVIRONMENT; MINERALS; PAPILIONOIDEAE; SOIL CHEMICOPHYSICAL PROPERTIES; SOUTH EAST ASIA; WATER CIRCULATION;

Descriptors in Spanish: *ARACHIS HYPOGAEA; *ABONOS FOSFATADOS; *CALCITA; *PERIODO DE CRECIMIENTO; *RENDIMIENTO; *MAREAS; *ZONA DE INTERMAREA; *PH DEL SUELO; *ANALISIS DEL SUELO; *KALIMANTAN; ABONOS; AMBIENTE ACUATICO; AMBIENTE MARINO; ARACHIS; ASIA; ASIA SUDORIENTAL; CIRCULACION DEL AGUA; ETAPAS DE DESARROLLO; INDONESIA; LEGUMINOSAE; MEDIO AMBIENTE; MINERALES; PAPILIONOIDEAE; PROPIEDADES FISICO-QUIMICAS SUELO;

Descriptors in French: *ARACHIS HYPOGAEA; *ENGRAIS PHOSPHATE; *CALCITE; *PERIODE DE CROISSANCE; *RENDEMENT; *MAREE; *MILIEU INTERTIDAL; *PH DU SOL; *ANALYSE DE SOL; *KALIMANTAN; ARACHIS; ASIE; ASIE DU SUD EST; CIRCULATION DE L'EAU; ENGRAIS; ENVIRONNEMENT; INDONESIE; LEGUMINOSAE; MILIEU AQUATIQUE; MILIEU MARIN; MINERAUX; PAPILIONOIDEAE; PROPRIETE PHYSICOCHIMIQUE DU SOL; STADE DE DEVELOPPEMENT;

14/7,DE/23 (Item 2 from file: 203)
DIALOG(R)File 203:AGRIS
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02244595 AGRIS No: 1998-058010

[Chlorella pyrenoidosa biomass production in green house scale] (Produksi biomasa mikroalga Chlorella pyrenoidosa dalam skala rumah kaca) Agustini, N.W.S. (Pusat Penelitian dan Pengembangan Bioteknologi, Bogor (Indonesia)); Susilaningsih, D.; Kabinawa, I.N.K.

Conference Title: 2. Seminar Hasil Penelitian dan Pengembangan Bioteknologi

Conference Location and Year: Bogor (Indonesia), 6-7 Sep 1994
[Proceedings of the second seminar of biotechnology of research result and development] (Prosiding seminar hasil penelitian dan pengembangan bioteknologi kedua, Bogor, 6-7 September 1994)

Soetisna, U.; Tappa, B.; Sukara, E.; Sukiman, H.I.; Widyastuti, Y.; Ermayanti, T.M.; Imelda, M.; Prayitno, N.R.; Loedin, I.H.S. (Eds.)

Pusat Penelitian dan Pengembangan Bioteknologi, Bogor (Indonesia)

Publisher: Puslitbang Bioteknologi, Bogor (Indonesia), 1995, p. 559-563

Notes: Received 1997

Notes: 1 ill., 1 table; 7 ref.

Language: Indonesian Summary Language: English, Indonesian

Place of Publication: Indonesia

Document Type: Analytic, Monograph, Summmary, Conference

Journal Announcement: 2407 Record input by Indonesia

Chlorella, one of microalga (Chlorophyceae) have been long regarded as a potential for feed and food. All of part of Chlorella cell include nutrition needs for human health. This microalga is easily cultivated, harmful and have not been poison for consumption (Aujero, 1980; Richmond, 1986; Kabinawa, 1989). Chlorella cultivation at laboratory scale using commercial fertilizers Urea, TSP and ZA (Kabinawa, 1989) can produce 0.8 gr/l dry biomass. An experiment was carried out in the green house to produce the alga at commercial scale with the same media hit with the addition of two limiting factors, temperature and light intensity. The result are 0.4-0.5 gr biomass/l medium containing 55.15 percent of protein; 3.56 percent of fat; 22.09 percent of carbohydrate; 0.61 percent of chlorophyll; 0.26 percent of carotenoid; fiber 19.89 percent; 20.49 percent of ash and 9.71 percent of water.

Salah satu mikroalga Chlorophyceae yang cukup potensial sebagai pakan dan pangan nabati yang bernilai ekonomis adalah Chlorella. Hal ini diduga karena seluruh sel mikroalga ini mengandung bahan-bahan nutrisi yang diperlukan bagi kesehatan manusia. Juga mikroalga ini tidak mengeluarkan racun bagi manusia dan mudah dikultur (Aujero, 1980; Richmond, 1986; Kabinawa, 1989). Kultur mikroalga Chlorella dalam skala laboratorium dengan menggunakan media pupuk komersial Urea, TSP dan ZA (Kabinawa, 1989) diperoleh biomassa kering 0,8 g/l dengan kualitas nutrisi yang memadai. Untuk mengetahui apakah strain lokal ini (*C. pyrenoidosa*) layak dikembangkan ke skala komersial, maka dilakukan penelitian pada skala rumah kaca dengan menggunakan media yang sama namun yang dianggap menjadi faktor pembatas adalah intensitas cahaya dan suhu. Hasil yang diperoleh adalah 0,4-0,5 g biomasa/l medium dengan nutrisi protein 55,15 persen; lemak 3,56 persen; karbohidrat 22,09 persen; klorofil 0,61 persen; karotenoid 0,26 persen, serta fiber 19,89 persen, abu 20,49 persen dan air 9,71 persen.

Descriptors in English: *CHLORELLA PYRENOIDOSA; *BIOMASS; *CULTIVATION; *CULTURE MEDIA; *GREENHOUSES; ALGAE; CHLORELLA; CHLOROPHYCEAE; EQUIPMENT; PROTECTIVE STRUCTURES;

Descriptors in Spanish: *CHLORELLA PYRENOIDOSA; *BIOMASA; *CULTIVO; *MEDIO DE CULTIVO; *INVERNADEROS; ALGAE; CHLORELLA; CHLOROPHYCEAE; EQUIPO; ESTRUCTURAS DE PROTECCION;

Descriptors in French: *CHLORELLA PYRENOIDOSA; *BIOMASSE; *PRATIQUE CULTURALE; *MILIEU DE CULTURE; *SERRE; ALGAE; CHLORELLA; CHLOROPHYCEAE; MATERIEL; STRUCTURE DE PROTECTION;

14/7,DE/24 (Item 3 from file: 203)

DIALOG(R)File 203:AGRIS

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02225071 AGRIS No: 1998-035716

[Relationship between conservation farming system and cattle development in increasing farmer income in dry land] (Kaitan antara usahatani konservasi dan pengembangan ternak dalam peningkatan pendapatan petani di lahan kering)

Hermawan A. (Balai Pengkajian Teknologi Pertanian Ungaran, (Indonesia)); Prasetyo; Juanda; Pramono, J.; Setiani, C.

Conference Title: Seminar dan Temu Lapang Teknologi Konservasi Air Berwawasan Agribisnis pada Ekosistem Wilayah Sumatra Barat

Conference Location and Year: Singkarak (Indonesia), 21-22 Dec 1995

[Water conservation technology with agribusiness perspective on

ecosystem of West Sumatra areas: seminar and field day proceedings: supporting papers] (Teknologi konservasi air berwawasan agribisnis pada ekosistem wilayah Sumatra Barat: prosiding seminar dan temu lapang: makalah penunjang)

Wahid, P.; Dhalimi, A.; Karmawati, E.; Amien, I.; Las, I.; Hadad E.A., M. (eds)

Balai Penelitian Tanaman Rempah dan Obat, Bogor (Indonesia)

Publisher: BALITTRO, Bogor (Indonesia), 1995, p. 197-209

Notes: 7 tables; 23 ref.

Language: Indonesian Summary Language: Indonesian

Place of Publication: Indonesia

Document Type: Analytic, Monograph, Summary

Journal Announcement: 2405 Record input by Indonesia

Sudah dipahami bahwa untuk mengantisipasi meluasnya lahan kering kritis diperlukan adanya upaya konservasi tanah. Dalam kaitan ini, usahatani ternak mempunyai peranan yang sangat strategi karena mempunyai fungsi ganda, baik sebagai sumber pendapatan petani maupun kemampuannya dalam penyediaan bahan organik tanah. Masalah utama yang ditemui dalam pengembangan skala usahatani ternak adalah terbatasnya kemampuan petani dalam penyediaan hijauan pakan ternak. Namun demikian, introduksi hijauan pakan yang dikaitkan dengan upaya konservasi tanah seringkali tidak berlanjut penerapannya oleh petani. Oleh karena itu telah dilaksanakan suatu penelusuran sejauh mana introduksi hijauan pakan dan perbaikan pola tanam dapat meningkatkan daya dukung pakan ternak dan apakah upaya yang dilaksanakan mempunyai pengaruh terhadap pendapatan dan mampu merehabilitasi lahan kritis. Dari analisis yang dilaksanakan diketahui walaupun penanaman penguat teras menurunkan produksi tanaman pangan, namun dengan mengembangkan pola tanam dan budidaya maka pendapatan dan daya dukung hijauan pakan ternak dapat ditingkatkan secara nyata. Hijauan yang dihasilkan akan memungkinkan untuk digunakan mencukupi kebutuhan pakan 4 ekor sapi dan mulsa serta pupuk hijau untuk tujuan konservasi dan rehabilitasi tanah. Peningkatan skala usaha ternak dari 1.32 ekor menjadi 4 ekor sapi juga akan meningkatkan produksi pupuk kandang sehingga mampu mencukupi kebutuhan pupuk tanaman pangan dan sekitar 25-30 persen kebutuhan pupuk tanaman tahunan. Dari analisis yang dilakukan menunjukkan bahwa usahatani konservasi dapat dikembangkan lebih lanjut. Yang diperlukan petani tampaknya adalah pembinaan yang berkesinambungan dari pemerintah, sehingga petani mampu memahami esensi teknologi yang diintroduksi.

Descriptors in English: *FOOD CROPS; *FEED GRASSES; *CROP MANAGEMENT; *LIVESTOCK; *COST BENEFIT ANALYSIS; *LAND MANAGEMENT; *FARM INCOME; *DRY FARMING; CROPS; CULTURAL METHODS; DOMESTIC ANIMALS; ECONOMIC ANALYSIS; FEEDS; GRASSES; INCOME; USEFUL ANIMALS;

Descriptors in Spanish: *CULTIVOS ALIMENTICIOS; *GRAMINEAS FORRAJERAS; *MANEJO DEL CULTIVO; *GANADO; *ANALISIS DE COSTOS Y BENEFICIOS; *ORDENACION DE TIERRAS; *RENTA DE LA EXPLOTACION; *CULTIVO EN TIERRAS ARIDAS; ANALISIS ECONOMICO; ANIMALES DOMESTICOS; ANIMALES UTILES; CULTIVOS; GRAMINEAS; METODOS DE CULTIVO; PIENSOS; RENTA;

Descriptors in French: *PLANTE ALIMENTAIRE; *GRAMINEE FOURRAGERE; *CONDUITE DE LA CULTURE; *BETAIL; *ANALYSE COUT AVANTAGE; *GESTION FONCIERE; *REVENU DE L'EXPLOITATION; *ARIDOCULTURE; ALIMENT POUR ANIMAUX; ANALYSE ECONOMIQUE; ANIMAL DOMESTIQUE; ANIMAL UTILE; GRAMINEE; MODE DE CULTURE; PLANTE DE CULTURE; REVENU;

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02215535 AGRIS No: 1998-024758

[Potential estimate of aquid resources (Ormastrephidae) in exclusive economic zones, Samudera Hindia] (Perkiraan potensi sumber daya cumi-cumi samudera (Ormastrephidae) di perairan ZEE Samudera Hindia)

Marzuki, S. (Instalasi Penelitian dan Pengkajian Teknologi Pertanian, Semarang (Indonesia)); Djamal, R.

Conference Title: 1. Simposium Perikanan Indonesia

Conference Location and Year: Jakarta (Indonesia), 25-27 Aug 1996

[Proceeding of symposium of one Indonesia fishery. book 2: plant: resources of fisheries and catching] (Prosiding simposium perikanan Indonesia 1: buku 2: bidang: sumber daya perikanan dan penangkapan)

Pusat Penelitian dan Pengembangan Perikanan, Jakarta (Indonesia)

Publisher: Puslitbangkan, Jakarta (Indonesia), 1995, p. 588-597

Series title: Prosiding Puslitbangkan (Indonesia), (no. 39)

ISBN: 979-8186-42-7

Notes: 1 ill., 3 tables; 8 ref. Notes: Received 1996

Language: Indonesian Summary Language: Indonesian

Place of Publication: Indonesia

Document Type: Analytic, Monograph, Summmary, Conference

Journal Announcement: 2403 Record input by Indonesia

Cumi leak (Nototodarus sloani) merupakan salah satu jenis cumi-cumi samudera yang tertangkap di Samudera Hindia. Kisaran panjang mantel (ML) cumi-cumi ini adalah 11,0-22,5 cm dan beratnya (W) antara 40,0-400,0 gram. Persamaan hubungan panjang beratnya adalah $W = 0,0116 \text{ ML pangkat } 3,4656$ (cm, gram). Perkiraan sebaran vertikal (kedalaman) dari densitas cumi-cumi tersebut adalah (0-100) m = 0,1362 ton/km persegi (100-200) m = 0,0456 ton/km persegi dan (200-300)m = 0,0510 ton/km persegi. Dengan demikian total densitasnya = 0,2323 ton/km persegi. Mengingat luas lahan survei adalah 122.200 km persegi, maka standing stok cumi-cumi di lahan survei tersebut diperkirakan sebesar 28.450 ton. Luas lahan ZEE di sebelah Selatan Jawa dan Barat Sumatera diperkirakan sebesar 1,2 juta km persegi. Oleh karena itu standing stok cumi-cumi diperkirakan mencapai 274.704 ton, dengan perkiraan jumlah yang boleh ditangkap (potensi lestari) mencapai 0,14-0,20 juta ton/tahun.

Descriptors in English: *CUTTLEFISH; *FISHERY RESOURCES; *INLAND WATERS; *EXCLUSIVE ECONOMIC ZONES; FOODS; NATURAL RESOURCES; PHYSIOGRAPHIC FEATURES; SEAFOODS;

Descriptors in Spanish: *SEPIA (MOLUSCO); *RECURSOS PESQUEROS; *AGUAS INTERIORES; *ZONAS DE ECONOMIA EXCLUSIVA; ALIMENTOS; ALIMENTOS DE ORIGEN MARINO; ASPECTOS FISIOGRAFICOS; RECURSOS NATURALES;

Descriptors in French: *SEICHE; *RESSOURCE HALIEUTIQUE; *EAUX CONTINENTALES; *ZONE ECONOMIQUE EXCLUSIVE; ELEMENT GEOMORPHOLOGIQUE; PRODUIT ALIMENTAIRE; PRODUIT ALIMENTAIRE ORIGINE MARINE; RESSOURCE NATURELLE;

14/7,DE/26 (Item 5 from file: 203)

DIALOG(R)File 203:AGRI

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02211218 AGRIS No: 1998-017042

[Recommendation of alternative soybean technological package in irrigated lowland] (Usulan alternatif paket teknologi kedelai di lahan sawah irigasi)

Hidayat, J.R.; Wityanara, S.A.S.; Pirngadi, K.; Kartaatmadja, S.; Fagi, A.M.; Toha, H.M.; Thahir, R.; Suryana, T.; Hasanuddin, A. (Balai

Penelitian Tanaman Padi, Sukamandi (Indonesia))

Conference Title: Lokakarya Pemantapan Teknologi Usahatani Palawija Untuk Mendukung Sistem Usahatani Berbasis Padi Dengan Wawasan Agribisnis (SUTPA)

Conference Location and Year: Malang (Indonesia), 8-9 May 1996

[Strengthening palawija farming technologies in supporting rice-based cropping system with agribusiness perspective (SUTPA)] (Pemantapan teknologi usahatani palawija untuk mendukung sistem usahatani berbasis padi dengan wawasan agribisnis (SUTPA): risalah lokakarya)

Heriyanto; Antarlina, S.S.; Kasno, A.; Saleh, N.; Taufiq, A.; Winarto, A. (eds.)

Balai Penelitian Tanaman Kacang-kacangan dan Umbi-umbian, Malang (Indonesia)

Publisher: Balitkabi, Malang (Indonesia), 1996, p. 45-77

Series title: Edisi Khusus Balitkabi (Indonesia), (no. 8)

Notes: 33 tables; 15 ref. ISSN: 0854-8625 Notes: Received 1997

Language: Indonesian Summary Language: English, Indonesian

Place of Publication: Indonesia

Document Type: Analytic, Monograph, Summmary, Conference

Journal Announcement: 2403 Record input by Indonesia

Irrigated lowland is one of potential resources of farmland for growing soybean through a rice-based farming system with the cropping pattern of rice-rice-food legumes (palawija). On the basis of water limitation quantity of volume or in term of time supplying, there are some cropping alternatives famously known at Jatiluhur irrigation lowland is due to period of water supply available for annual schedule toward to the respecting locations. Recommended soybean varieties are with short or medium maturity, and are certified seeds suitable for zero tillage. Fertilizers application is required to step the grain yield up. Soybean with the pattern of cropping rice-rice-soybean, favors at full management of watering. Water supply is needed at least 3-5 times during planting time. The main constraint in soybean production improvement at lowland area is pod borer. During hot dry season that borer damage and losses concerned by the farmers. Effort in improving grain quality of the soybean should be supported by a proper postharvest maintenance including hand-cutting, drying and storaging. The post-harvest manual activities are suggestedly completed by machineries of dryer, stem-cutter, and thresher. It has been proposed that there were three alternative packages of technology for growing soybean at rice field, the first package for irrigated rice field with supply period of 11 months (Group I), the second package of 10.5 months (Group II), and the third package of 10 months (Group III).

Lahan sawah irigasi merupakan salah satu sumber daya alam yang sangat potensial untuk pengembangan kedelai dalam suatu sistem usahatani berbasis padi dengan wawasan agribisnis (SUTPA) pada pola tanam padi - padi - palawija. Dilihat dari ketersediaan air, baik jumlah maupun waktunya, maka dapat dipilih beberapa alternatif pola tanam di lahan sawah irigasi seperti wilayah pengairan Jatiluhur. Alternatif pola tanam mengikuti jangka waktu pengairan yang tersedia dalam setahun yang terbagi ke dalam wilayah golongan pengairan. Varietas kedelai yang dianjurkan adalah varietas unggul berumur genjah dan sedang dengan benih yang bermutu yang ditanam secara tugal tanpa olah tanah. Pemberian pupuk diperlukan untuk mendapatkan tingkat hasil kedelai yang tinggi. Tanaman kedelai dengan pola tanam padi-padi-kedelai sangat memerlukan pengairan penuh. Pemberian air diperlukan minimal 3-5 kali selama musim tanam. Kendala utama dalam upaya peningkatan produksi kedelai di lahan sawah irigasi tersebut adalah serangan hama terutama hama penggerek polong. Dalam keadaan iklim yang kering, hama tersebut dapat mengakibatkan kehilangan hasil mencapai 96 persen. Oleh karena itu pengendalian terhadap hama tersebut perlu

diwaspadai. Untuk meningkatkan mutu hasil, perlu ditunjang oleh kegiatan penanganan pasca panen seperti pemanenan, pengeringan dan penyimpanan. Kegiatan pasca panen tersebut dapat dibantu dengan alat-alat tertentu seperti pengering (dryer), pemotong (pod-cutter) dan perontok. Telah dievaluasi 3 (tiga) alternatif paket teknologi kedelai di lahan sawah irigasi, yakni paket teknologi kedelai untuk lahan sawah irigasi dengan lama pengairan 11 bulan (golongan I), paket untuk lahan sawah irigasi dengan lama pengairan 10,5 bulan (golongan II) dan paket untuk lahan sawah irigasi dengan lama pengairan 10 bulan (golongan III).

Descriptors in English: *GLYCINE MAX; *SOYBEANS; *APPROPRIATE TECHNOLOGY; *CROPPING SYSTEMS; *CULTIVATION; *IRRIGATED LAND; *LOWLAND; FARMLAND; GLYCINE (GENUS); LAND RESOURCES; LEGUMINOSAE; NATURAL RESOURCES; NONRENEWABLE RESOURCES; PAPILIONOIDEAE; PHYSIOGRAPHIC FEATURES; PLANT PRODUCTS; TECHNOLOGY; VEGETABLES;

Descriptors in Spanish: *GLYCINE MAX; *SOJA; *TECNOLOGIA APROPIADA; *SISTEMAS DE CULTIVO; *CULTIVO; *REGADIO; *TIERRAS BAJAS; ASPECTOS FISIOGRAFICOS; GLYCINE; HORTALIZAS; LEGUMINOSAE; PAPILIONOIDEAE; PRODUCTOS DE ORIGEN VEGETAL; RECURSOS DE LA TIERRA; RECURSOS NATURALES; RECURSOS NO RENOVABLES; TECNOLOGIA; TIERRAS AGRICOLAS;

Descriptors in French: *GLYCINE MAX; *SOJA; *TECNOLOGIE APPROPRIEE; *SYSTEME DE CULTURE; *PRATIQUE CULTURALE; *TERRE IRRIGUEE; *REGION DE BASSE ALTITUDE; ELEMENT GEOMORPHOLOGIQUE; GLYCINE (GENRE); LEGUME; LEGUMINOSAE; PAPILIONOIDEAE; PRODUIT VEGETAL; RESSOURCE FONCIERE; RESSOURCE NATURELLE; RESSOURCE NON RENOUVELABLE; TECHNOLOGIE; TERRE AGRICOLE;

14/7,DE/27 (Item 6 from file: 203)
DIALOG(R) File 203:AGRIS
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02195913 AGRIS No: 97-166410

[Food science study of the "maca or paca" (*Lepidium meyenii*)] (Estudio bromatologico de la maca o paca (*Lepidium meyenii*))

Comas, M.; Miquel, X.; Torre, M.C. de la (Universidad de Barcelona (Espana)); Arias, G.

Journal: Alimentaria, Oct 1997, (no.286) p. 85-90

Notes: 10 tab.; 13 ref. ISSN: 0300-5755

Language: Spanish Summary Language: English, Spanish

Place of Publication: Espana

Document Type: Journal Article, Numerical Data, Summary

Journal Announcement: 2312 Record input by Spain

Abstract in Espanol

Se presenta el estudio bromatologico de la "maca o paca" (*Lepidium meyenii*), crucifera tuberosa, cultivada en la region andina del Peru, a fin de conocer con detalle los nutrientes que pudieran explicar su importancia nutricional, supuesta y admitida en las epocas precolombinas. Hoy dia, quiere reivindicarse y explotarse como planta nativa de cultivo preferente en zonas de climas extremos donde crece preferentemente.

Descriptors in English: *LEPIDIUM MEYENII; *PROXIMATE COMPOSITION; *CHEMICAL COMPOSITION; *ANALYTICAL METHODS; *NUTRITIVE VALUE; *PERU; AMERICA; ANDEAN REGION; CRUCIFERAE; LATIN AMERICA; LEPIDIUM; QUALITY; SOUTH AMERICA;

Descriptors in Spanish: *LEPIDIUM MEYENII; *COMPOSICION APROXIMADA; *COMPOSICION QUIMICA; *TECNICAS ANALITICAS; *VALOR NUTRITIVO; *PERU; AMERICA; AMERICA DEL SUR; AMERICA LATINA; CALIDAD; CRUCIFERAE; LEPIDIUM;

REGION ANDINA;

Descriptors in French: *LEPIDIDIUM MEYENII; *COMPOSITION GLOBALE; *
COMPOSITION CHIMIQUE; *TECHNIQUE ANALYTIQUE; *VALEUR NUTRITIVE; *PEROU;
AMERIQUE; AMERIQUE DU SUD; AMERIQUE LATINE; CRUCIFERAE; LEPIDIUM; QUALITE
; REGION ANDINE;

14/7,DE/28 (Item 7 from file: 203)
DIALOG(R)File 203:AGRI
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02129521 AGRIS No: 97-075603

[Ecology, use and conservation of the maca *Lepidium* sp. in the central
Andes (Junin and Pasco) of Peru] (Ecologia, uso y conservacion de la maca
Lepidium sp. en los Andes centrales (Junin y Pasco) del Peru)

Cordova Herrera, H.E.

Universidad Nacional Agraria La Molina, Lima (Peru). Escuela de
Post-Grado. Especialidad en Conservacion de Recursos Forestales

Thesis Degree: Tesis (Mag Sc)

Publisher: , Lima (Peru), 1993, 117 p.

Notes: 17 graf. 13 cuadros; 59 ref.

Language: Spanish Summary Language: Spanish

Place of Publication: Peru

Availability: Universidad Nacional Agraria La Molina - Biblioteca
Agricola Nacional Casilla Postal 14-0297 Lima - Peru

Document Type: Monograph, Dissertation, Bibliography, Summary,
Nonconventional Literature

Journal Announcement: 2306 Record input by Peru

Descriptors in English: *LEPIDIDIUM; *ECOLOGY; *RESOURCE CONSERVATION; *
FOOD CROPS; *FELLING AREAS; *GEOGRAPHICAL DISTRIBUTION; *FARM AREA; *
CONSUMER BEHAVIOUR; *HIGHLANDS; *PERU; AGRICULTURAL STRUCTURE; AMERICA
; ANDEAN REGION; BEHAVIOUR; BIOGEOGRAPHY; CROPS; CRUCIFERAE; FARM SIZE;
FARM STRUCTURE; HUMAN BEHAVIOUR; LATIN AMERICA; PHYSIOGRAPHIC FEATURES;
RESOURCE MANAGEMENT; SOUTH AMERICA;

Descriptors in Spanish: *LEPIDIDIUM; *ECOLOGIA; *CONSERVACION DE LOS
RECURSOS; *CULTIVOS ALIMENTICIOS; *ZONAS DE APROVECHAMIENTO; *
DISTRIBUCION GEOGRAFICA; *SUPERFICIE DE LA EXPLOTACION; *COMPORTAMIENTO
DEL CONSUMIDOR; *ZONA DE MONTANA; *PERU; AMERICA; AMERICA DEL SUR;
AMERICA LATINA; ASPECTOS FISIOGRAFICOS; BIOGEOGRAFIA; COMPORTAMIENTO;
COMPORTAMIENTO HUMANO; CRUCIFERAE; CULTIVOS; ESTRUCTURA AGRICOLA;
ESTRUCTURA DE LA EXPLOTACION; ORDENACION DE RECURSOS; REGION ANDINA;
TAMANO DE LA FINCA;

Descriptors in French: *LEPIDIDIUM; *ECOLOGIE; *CONSERVATION DES RESSOURCES
; *PLANTE ALIMENTAIRE; *PARTERRE DE COUPE; *DISTRIBUTION GEOGRAPHIQUE; *
SURFACE D'EXPLOITATION; *COMPORTEMENT DU CONSOMMATEUR; *REGION
D'ALTITUDE; *PEROU; AMERIQUE; AMERIQUE DU SUD; AMERIQUE LATINE;
BIOGEOGRAPHIE; COMPORTEMENT; COMPORTEMENT HUMAIN; CRUCIFERAE; ELEMENT
GEOMORPHOLOGIQUE; GESTION DES RESSOURCES; PLANTE DE CULTURE; REGION
ANDINE; STRUCTURE AGRICOLE; STRUCTURE D'EXPLOITATION AGRICOLE; TAILLE DE
L'EXPLOITATION AGRICOLE;

14/7,DE/29 (Item 8 from file: 203)
DIALOG(R)File 203:AGRI
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02096831 AGRIS No: 97-027732

Coconut nutritive value (Nilai gizi buah kelapa)

Siahaan, D.; Tri-Haryati; Naibaho, P.M. (Pusat Penelitian Kelapa Sawit, Medan (Indonesia))

Journal: Berita Pusat Penelitian Kelapa Sawit, 1993, v. 1(2) p. 105-116

Notes: 9 tables; 19 ref. ISSN: 0854-4743 Notes: Received 1995

Language: Indonesian Summary Language: English, Indonesian

Place of Publication: Indonesia

Document Type: Journal Article, Summary

Journal Announcement: 2302 Record input by Indonesia

Abstract in English, Bahasa

Coconut and its products are a potential nutrient source. Because coconut is commonly used in daily food preparations of Indonesian people, the coconut nutritive value study is needed as a basic information for policy making of improving nutritive status. Coconut possess good quality protein. Limiting amino acids are lysine, sulphuric amino acids and threonine with the chemical scores of 49, 42 and 58, respectively. Conventional copra processing reduces nutritive values. However, wet processing method give wide alternative of nutritious food products such as virgin oil that has an optimum tocopherol content; coconut cream that has 20 to 30 percent protein; coconut skim milk that has 37 percent protein and 10 percent mineral; and protein concentrate with chemical score 67 on lysine as the limiting amino acid. Coconut oil is rich in medium chain fatty acids, which are relatively easy to be absorbed by body. Coconut water can be used for medical treatment and dietary fibre production.

Buah kelapa dan produk olahannya mempunyai potensi sebagai sumber nutrisi. Mengingat penggunaan kelapa yang luas dalam menu sehari-hari bangsa Indonesia, maka kajian tentang nilai gizi kelapa sangat diperlukan sebagai informasi dasar dalam perumusan kebijakan peningkatan status gizi. Kualitas protein daging buah kelapa cukup baik, dengan asam amino pembatas lisin, asam amino bersulfur dan treonin dengan skor kimia masing-masing secara berurut 49, 42 dan 58. Pengolahan kopra konvensional menyebabkan penurunan nilai gizi. Sebaliknya pengolahan produk dengan pengolahan cara basah memberikan alternatif produk pangan bergizi yang luas seperti virgin oil yang optimum dalam kandungan tokoferol, krim kelapa yang mengandung 20 sampai 30 persen protein, skim kelapa yang mengandung 37 persen protein dan 10 persen mineral dan konsentrat protein dengan skor kimia 67 pada asam amino pembatas lisin. Minyak kelapa kaya akan asam lemak berantai sedang yang relatif sangat mudah diserap tubuh. Air kelapa berguna untuk keperluan medis dan sebagai bahan baku pembuatan serat bahan pangan.

Descriptors in English: *COCONUTS; *NUT CROPS; *NUTRITIVE VALUE; *PROXIMATE COMPOSITION; *ENDOSPERM; *ESSENTIAL AMINO ACIDS; AMINO ACIDS; CROPS; DEVELOPMENTAL STAGES; KERNELS; NUTS; PLANT ANATOMY; PLANT DEVELOPMENTAL STAGES; PLANT PRODUCTS; PLANT REPRODUCTIVE ORGANS; QUALITY; SEEDS;

Descriptors in Spanish: *COCO; *PLANTAS DE FRUTOS SECOS; *VALOR NUTRITIVO; *COMPOSICION APROXIMADA; *ENDOSPERMA; *AMINOACIDOS ESENCIALES; AMINOACIDOS; ANATOMIA DE LA PLANTA; CALIDAD; CULTIVOS; ETAPAS DE DESARROLLO; ETAPAS DE DESARROLLO DE LA PLANTA; FRUTOS SECOS; GERMEN; ORGANOS REPRODUCTORES VEGETALES; PRODUCTOS DE ORIGEN VEGETAL; SEMILLA;

Descriptors in French: *NOIX DE COCO; *PLANTE A FRUITS A COQUE; *VALEUR NUTRITIVE; *COMPOSITION GLOBALE; *ENDOSPERME; *ACIDE AMINE ESSENTIEL; ACIDE AMINE; AMANDE DE LA GRAINE; ANATOMIE VEGETALE; FRUITS A COQUE; GRAINE; ORGANE REPRODUCTEUR VEGETAL; PLANTE DE CULTURE; PRODUIT VEGETAL; QUALITE; STADE DE DEVELOPPEMENT; STADE DE DEVELOPPEMENT VEGETAL;

14/7,DE/30 (Item 9 from file: 203)
DIALOG(R)File 203:AGRIS
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02076672 AGRIS No: 97-002142

[Analytical study of cropping systems in marginal lands of Konto watershed Malang, East Java (Indonesia)] (Studi analisis pola tanam di lahan kritis Das Konto Malang Jawa Timur)

Soemarno (Institut Pertanian Malang (Indonesia))

Journal: Jurnal IPM : Institut Pertanian Malang, 1991, v. 1(2) p. 1-4
Notes: 2 tables; 4 ref. Notes: Received 1995

Language: Indonesian Summary Language: English, Indonesian

Place of Publication: Indonesia

Document Type: Journal Article, Summary

Journal Announcement: 2301 Record input by Indonesia

Abstract in English, Bahasa

Management of agricultural lands which have shown the critical indicators usually confront many constraints and serious problems. One of the serious problems was selection of the optimum cropping systems which is economically feasible, ecologically suitable, and permissible erosion. Based on these considerations, designing cropping systems must be supported by accurate information about the existing land resources suitability, and accessibility of socio-economic factors. This study was conducted to find out the optimal design of cropping systems. Result of this study showed that the optimal cropping systems for a certain land unit were different from the others. The optimal cropping systems for sawah lands were Rice-Rice-Palawija/Vegetables, or Rice-Palawija/Vegetable s, and Palawija/Vegetable-Palawija/Vegetables. The palawija crops in this study were maize and peanuts; and vegetable crops were potatoes, cabbage, carrot, peas, garlic, and shallots.

Pengelolaan lahan pertanian yang telah menunjukkan gejala-gejala kekritisian lahan senantiasa menghadapi berbagai kendala, diantaranya adalah pemilihan pola tanam yang layak ekonomis, sesuai ekologis, dan aman erosi. Atas dasar ini maka upaya perencanaan pola tanam di suatu lahan memerlukan dukungan informasi yang akurat tentang kondisi sumberdaya lahan yang ada, serta daya dukung sosial-ekonomis petani pengelolanya. Penelitian ini dilakukan untuk menelaah hal tersebut, dengan harapan dapat ditemukan alternatif arahan pola tanam yang optimal. Hasil penelitian ini menunjukkan bahwa pola tanam yang optimal untuk suatu bidang lahan berbeda dengan bidang lahan lainnya. Pola tanam lahan sawah yang dianggap optimal adalah padi-palawija/sayuran atau padi-sayuran/palawija; sedangkan untuk lahan tegalan adalah palawija/sayuran. Palawija yang dimaksud adalah kentang, kubis, wortel, kacang merah, bawang merah dan bawang putih.

Descriptors in English: *FOOD CROPS; *FARMLAND; *FARM MANAGEMENT; *LAND MANAGEMENT; *SOCIOECONOMIC DEVELOPMENT; *LAND RESOURCES; *CROPPING SYSTEMS; *PRODUCTION FACTORS; *VEGETABLE CROPS; *ORYZA; *ECONOMIC ANALYSIS; *EROSION; *JAVA; ASIA; BUSINESS MANAGEMENT; CROPS; ECONOMICS; GRAMINEAE; INDONESIA; LAND RESOURCES; NATURAL RESOURCES; NONRENEWABLE RESOURCES; PRODUCTION ECONOMICS; SOUTH EAST ASIA;

Descriptors in Spanish: *CULTIVOS ALIMENTICIOS; *TIERRAS AGRICOLAS; *MANEJO DE FINCAS; *ORDENACION DE TIERRAS; *DESARROLLO ECONOMICO Y SOCIAL; *RECURSOS DE LA TIERRA; *SISTEMAS DE CULTIVO; *FACTORES DE PRODUCCION; *HORTALIZAS (PLANTAS); *ORYZA; *ANALISIS ECONOMICO; *EROSION; *JAVA; ADMINISTRACION DE EMPRESAS; ASIA; ASIA SUDORIENTAL; CULTIVOS; ECONOMIA; ECONOMIA DE LA PRODUCCION; GRAMINEAE; INDONESIA; RECURSOS DE LA TIERRA; RECURSOS NATURALES; RECURSOS NO RENOVABLES;

Descriptors in French: *PLANTE ALIMENTAIRE; *TERRE AGRICOLE; *GESTION DE L'EXPLOITATION AGRICOLE; *GESTION FONCIERE; *DEVELOPPEMENT SOCIOECONOMIQUE; *RESSOURCE FONCIERE; *SYSTEME DE CULTURE; *FACTEUR DE PRODUCTION; *PLANTE LEGUMIERE; *ORYZA; *ANALYSE ECONOMIQUE; *EROSION; *JAVA; ASIE; ASIE DU SUD EST; ECONOMIE; ECONOMIE DE PRODUCTION; GESTION DE L'ENTREPRISE; GRAMINEAE; INDONESIE; PLANTE DE CULTURE; RESSOURCE FONCIERE; RESSOURCE NATURELLE; RESSOURCE NON RENOUVELABLE;

14/7,DE/31 (Item 1 from file: 351)
DIALOG(R)File 351:Derwent WPI
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013657371

WPI Acc No: 2001-141583/200115

Nutrition supplement food for reinforcing reproductive function, rejuvenating etc. is mixture of yeast containing zinc, placenta extract, and powdered South American plants guarana and maca

Patent Assignee: FUJII T (FUJI-I)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2000316528	A	20001121	JP 99164268	A	19990506	200115 B

Priority Applications (No Type Date): JP 99164268 A 19990506

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2000316528	A		4	A23L-001/30	

Abstract (Basic): JP 2000316528 A

Abstract (Basic):

NOVELTY - A nutrition supplement food comprises a mixture of powdered dried tap root and hypocotyl of the brassica root crop plant Maca (*Lepidium Meyenii* waip) from the Peruvian Andes; yeast which contains zinc, powdered fruit of the guarana plant (*Paullina cupana*) from South America Amazon river valley, and powdered extract of mammalian placenta.

ACTIVITY - Hepatotropic; dermatological; antianemic; antidiabetic; vulnerary; vasotropic; nephrotropic; hypotensive; antiulcer; laxative; antiallergic; neuroprotective.

The nutritive food (300 mg) was administered to a 44 years old male for 3 days and the erectile dysfunction was evaluated. The result showed remarkable erection of genitalia in early morning.

MECHANISM OF ACTION - None given.

USE - As nutritive food for reinforcing reproductive functions and also for preventing liver cirrhosis, pimple, eczema, liver spots, freckles, anemia, menopausal symptoms, diabetes mellitus, treating weakness after recovery from diseases, healing of wounds of skin or mucous membrane, hemorrhoids, nephrosis, hypertension, gastric and duodenum ulcer, periodontal disease, tooth socket pyorrhea, constipation, body odor, impotence, atopic dermatitis, allergic conditions and rejuvenation in old age.

pp; 4 DwgNo 0/0

Title Terms: NUTRIENT; SUPPLEMENT; FOOD; REINFORCED; REPRODUCE; FUNCTION; REJUVENATING; MIXTURE; YEAST; CONTAIN; ZINC; PLACENTA; EXTRACT; POWDER; SOUTH; AMERICAN; PLANT

Derwent Class: B04; D13

International Patent Class (Main): A23L-001/30

International Patent Class (Additional): A23L-001/212; A61K-035/50; A61K-035/72; A61K-035/78; A61P-015/00

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S2	889	MACA OR MACAS OR MAKA OR MAKAS OR (LEPIDIUM? ? OR L) (2N) (M-EYENII? ? OR PERUVIANUM? ? OR CHACON? ?)
S3	28926	EGGWHITE? ? OR EGG? ?(2N)WHITE? ?
S4	3137597	WATER? OR H2O OR AQ? ? OR AQUEOUS?
S5	92374	PERU OR PERUVIAN? ?
S6	325483	RECIPE? ?
S7	2	S2 AND S3
S8	140	S2 AND S1
S9	55	S8 AND S4

S10 20 S8 AND S5
S11 23 S8 AND S6
S12 7 S9 AND S10
S13 11 S9 AND S11
S14 3 S10 AND S11
S15 15 S7 OR S12 OR S13 OR S14
S16 14 RD S15 (unique items)
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CHRISPA! (JUST THINK 'BAM!)

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Land of the Potato Rainbow
In the Andes of Peru, dozens of ancient crops are waiting to be discovered
by the outside world.

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In the Valley of the Ancient Ones
In the Southern Ecuador Village of Vilcabamba, Centenarians Are
Common--Thanks to a Fertile Climate, Peaceful Setting and the
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HELP 'SANTA' WITH THESE EASY HOLIDAY SHOPPING IDEAS

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LOST CROPS OF THE INCAS ARE AWAITING DISCOVERY

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AMBASSADOR OF CHILEAN CUISINE CHEF COCO PACHECO INFUSES HIS RECIPES WITH
CHARISMA AND CREATIVITY

16/TI/10 (Item 1 from file: 707)
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RAMEN LOVERS THIS SQUARE OF DRY, COMPRESSED NOODLES UNWEAVES INTO A REAL
MEAL

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USING YOUR RAMEN NOODLES

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FOR THE LONG HAUL / SINCE 1977, RESERVES MAINTAIN PIPELINE
OF SUPPORT TO LATIN AMERICA

?pause

?t s16/9/3,4,5,8,9,13

16/9/3 (Item 1 from file: 630)
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00272018 (THIS IS THE FULLTEXT)

Land of the Potato Rainbow

In the Andes of Peru, dozens of ancient crops are waiting to be discovered
by the outside world.

LAURIE OCHOA, TIMES STAFF WRITER

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PISAC, Peru - It's late May, turning to June, harvest time in the Andes. Almost a month into the dry season, the sky is gray; the hillsides lush green, soaked with rains that defy the calendar.

In the bed of a dented white pickup truck, riding the bumps and ruts of a narrow dirt road just above Pisac, Dr. Carlos Arbizu grips the side of the vehicle with one hand and gestures toward the terraced landscape with the other.

"Do you see over there?" he asks, his voice shaking in time to the rhythm of the shuddering truck. "All the way up the mountain? Those houses come from Inca times. That's where they used to process gold."

The wheels slip slightly as the truck skids around a particularly intense bend, and dirt from what used to be the road a moment before rattles 2,000 feet down the steep embankment. Arbizu, unfazed, continues his commentary.

"Now, that smoke at the top of the hill, that is from the famous mud ovens, watia, in which potatoes, just harvested, are being baked for somebody's lunch. And can you see that copper-colored field to the left? That is kiwicha, or amaranth, as you say. Over there where it turns red, that's quinoa. And the dark patch up high--that is potato."

The truck, driven by Dr. Gregorio Meza, director of the Cuzco-based Andean Crop Research Center, slows as the village of Paruparu comes into view.

"You know," confides Arbizu, "I think Gregorio wants to kill us and the car."

Peru's ancient cities are ruins. The gold is gone. Yet the Inca empire lives on. Look at the faces of the women at the Sunday marketplace at Pisac, a bundle of hand-knit alpaca sweaters lugged on their backs, hoping to attract the attention--and American dollars--of tourists on their way to Machu Picchu. And here, in a cluster of mountain villages tenuously anchored onto the inclines of the Urubamba, the Sacred Valley of the Incas, most of the field work is done with the sweat of human labor, the tools little changed in the near half-millennium since the Spaniards arrived.

Farming terraces, many of them the same ones Francisco Pizarro saw when he came to conquer Cuzco, still blanket the steep slopes, a colorful patchwork quilt of colors--purple and magenta, orange and yellow, greens of every hue.

These are the colors of what some call the lost crops of the Incas, protein-rich treasures that the Spaniards left behind: the grains quinoa and kiwicha, the giant-kerneled corn from the valley called blanco Urubamba, the bean-like lupin seeds called tarwai, and potatoes of every size, shape and color, so varied in taste and texture that one believes the Peruvians when they talk about potato connoisseurs, as exacting as wine lovers.

And then there are the crops that few in this country have even heard of: ulluco (ulluku in Quechua), a slippery, nutty-tasting tuber, often Day-Glo yellow freckled with scarlet; oca (uqa in Quechua), a dimpled, odd-looking slightly sweet tuber, which Andean women eat after giving birth to regain their strength; the radish-shaped maca, perhaps the only crop in the world to produce reliable yields at an altitude of about 14,750 feet (plus, it tastes a little like butterscotch); mashua, which, for those unafraid of its famous side effect, depressed sexual appetite, contains almost as much protein as milk. Incan women, it is said, used to try to keep their husbands in line by secretly feeding them plenty of mashua before they left for battle or long journeys, a technique some Andean women still find useful.

If Peruvian farmers and scientists have their way, these crops might

show up in the produce bins at your local supermarket and in the kitchens of some of the country's best restaurants--imagine ulluco pizza at Spago. A few years of research and some bureaucratic wrangling will inevitably pass before Peru sets up a reliable importation system, as Chile has done for its agricultural products, but there are dozens of ancient crops waiting to be discovered by the outside world, crops that may one day be as economically important as wheat, corn--or the potato.

The Incas may have been the ancient world's greatest agronomists. They hadn't discovered iron, they didn't have cows or oxen to work their fields, they didn't even have a written language. But building on the knowledge of the civilizations that came before them, they transformed some of the earth's most hostile terrain--frost-susceptible, sharp-rising mountains and valleys, with a different microclimate occurring sometimes every few feet--into fertile, productive farmland.

By the time the Spaniards arrived, the Incas had cultivated an estimated 70 different crop species, almost as many as their contemporary farmers in the "developed" societies of all Europe or all Asia.

Descendants of the Incas still use many of the ancient techniques, methods that some boutique farmers in the United States have recently adopted as models for their own sustainable agriculture systems.

Andean farmers, for instance, rarely depend on just one crop; often they work several fields, each at different elevations, with varying weather conditions. One farmer might plant 50 different grains, roots, tubers and legumes, knowing that at least some of them will survive whatever pest or disease is most virulent that year. Fields are often intercropped--quinoa and corn, for instance might be grown on the same plot. And continuous crop rotation keeps the soil in shape and helps prevent parasites.

Where heavy rains soak the hillsides, threatening crop rot, the farmers dig into the mud with foot plows as they have for thousands of years, cutting deep furrows that channel off excess water, and building up small plots that rise above the canals.

This is what Arbizu now explains, as his feet slowly sink into the brilliant green turf of the village of Quello Quello:

"You see, they are preparing the land," he says, the hem of his wide-wale corduroy slacks soaking up mud.

Three young Andean men, each wielding a *taclla*, or foot plow, lean into the soil and turn over clumps of moist earth, as if working a thick biscuit dough with giant wooden spoons. "This is a pre-Inca technique," Arbizu says, "the usual way of making the soil productive. They want to use as much land as possible. And if there is less rain next year, maybe a drought, the water will already be down there for the roots of the new crops."

Many of the people of Quello Quello now gather for the harvest ceremony called *gallpi*, which includes eating boiled potatoes, *ocas* and *mashuas* with cheese. "It's a way of asking nature for good production next season," Meza explains. He reaches for an *oca*; Arbizu grabs his second *mashua*. Meza shoots a look at Arbizu--*mashua*, after all, is an anti-aphrodisiac.

"I'm going to have some more *mashua*," Arbizu insists, "because I am away from home."

Back in the truck, Arbizu is feeling good. "I love the highlands," he says. "I was born in the highlands and I started my career in the highlands. In cities like Lima, well, the people are rather neurotic."

Raised in Peru's remote department of Ayacucho in the central Andes, Arbizu started collecting Andean root and tuber crops some 20 years ago, and studied under the respected potato historian J.G. Hawkes in Birmingham, England. He now works as a special consultant with the International Potato Center, based in an outlying suburb of Lima.

As the truck bounces up the road, a cluster of boys, dressed in school

uniforms, chases after the researchers. Meza slows, letting the kids jump in the back, saving them from the long, steep hike back home.

"If we don't give them a lift," Arbizu says, "they will think we are arrogant. In the highlands, people live sharing everything--sharing the crops, even sharing their problems."

Unfortunately, there are plenty of problems to share in the highlands. The former Inca empire is among the world's poorest regions. And the higher you go in the mountains, the worse things get. Most mountain villages have no running water or electricity; infant mortality rates are high. Still, the Andeans have fierce pride in their culture. And growing international interest in their crops--dismissed for years as the food of the poor--could mean an improved livelihood for the farmers.

Up the mountain from Quello Quello, in the village of Amaru, at 12,530 feet above sea level, where the air is thin and dizzying, a farmer squats amid the bounty of his harvest--small, neat piles of purple and pink and yellow tubers, stretched out in a row.

Dressed in a beautifully woven poncho of yellow and aqua and pink, he picks up one of the several different potatoes that surround him. It is knobby all over and almost looks like a pine cone.

"This," says the farmer in his native Quechua language, "is the potato we call puka pina."

"'Puca' is red in Quechua," Arbizu explains. "And 'pina' is pineapple. You know in pre-Inca time, when a young lady was going to get married, she had to show to her future mother-in-law that she was going to be a good wife by peeling this very difficult potato, with the knife. If she succeeded, the relationship between the young lady and her future mother-in-law was going to be OK. If not, the relationship was no good."

Now the farmer points out a potato that is usually boiled, then another that is usually baked. He picks up two bitter potatoes, dark and purplish, which are used for chuno, potatoes that are freeze-dried and preserved as insurance against years of drought and failed crops, using an ancient method that pre-dates Bird's Eye by hundreds of years.

"Chuno is a staple food," Arbizu says, "and it goes into the soups of the highlands called chairo. You know, they say a chairo without chuno is like life without love."

The farmer boasts that in his community, 150 different cultivars--roots, tubers, grains and legumes--are grown. And, he says, they use no chemical fertilizers.

"This farmer is a conservationist," Arbizu says. "He plants a lot of different potatoes as a way of insurance. If one variety fails, he's got several others."

"You know in most countries, the potato requires a tremendous amount of pesticides. Here, there are no chemical fertilizers, no pesticides. It's the diversity of crops that allows this to be so. And also manure."

It's far from a perfect system. Part of this year's potato crop was attacked by a fungus here. And it's getting harder, the farmer says, to maintain the diversity of crops. Just 28 years old, he's already seen a dramatic decline in the number of locally grown crop types. He remembers a time when his village grew 70 varieties of potatoes alone.

When the Spaniards conquered Peru, they tried to suppress native crops and farming systems--they failed. In the '60s, outside aid organizations pumped subsidy money into the country and persuaded many farmers to grow rice, wheat and other non-native crops, many of which did not thrive in the oxygen-deprived heights of the Peruvian altiplano, and all of which required machine-driven farming techniques and expensive chemical pesticides. Still, the ancient crops survived.

These days, aid organizations, CARE among them, have changed their policies to encourage the preservation and development of native crops. The International Potato Center collects wild and native samples of

potatoes and other tuber crops, and has interbred many of them in developing new pest- and disease-resistant breeds that are also high-yielding. Dr. Carlos Ochoa (no relation), who discovered at least 80 of the 230 known wild potato species but worked for much of his 40-year career with little recognition or funding, has in recent years collected several international awards, including the Organization of American States' highest scientific honor, the \$30,000 Bernardo Hossay Prize. He's even picked up a pop-culture sobriquet: the Indiana Jones of the potato world.

But just as the outside world has come to realize the potential of Andean agriculture, the ancient crops and ways of farming have come under attack again--not just by outsiders, but from within.

Social and economic pressures--encroaching development, terrorist attacks on farmers, and especially the decline of the highland economy--have driven farming families to leave the altiplano for the cities of Peru. They come seeking jobs, opportunity, success; most often they end up in the slums that surround every Peruvian city of significance, from Lima to Juliaca.

They are places like Villa El Salvador, a sprawling squatter district built at the foot of several huge sand dunes on the outskirts of Lima, where mud-brown is the predominant color, where to make your way through the labyrinth of dusty streets, you must stop your car several times to ask for directions because there are no street signs, where most of the jerry-built dwellings, awaiting the construction of their second and third floors, are adorned with steel reinforcement rods that reach toward the sky like so many Martian antennae. And it's where social workers come calling on a group of women, members of a cooking co-op, gathered in a dark, but carefully swept mud-brick room, to tout a new, nutritious product for children made out of the Andean grain kiwicha --something that until a few years before these women grew themselves. When shown the new cereal, the women giggle with recognition.

Back in the Andes, in the village of Sacaca, Arbizu watches a group of women weave intricate patterns with their skeins of homemade yarn. "You know," he says, "it is really the women who are the caretakers of this culture. These women, for example, are farmers like the men, but when they come home from the fields they still work, weave. The men can rest, but the women cannot."

After the harvest, many of the men in these mountain villages will leave their homes to find temporary work in mines and other places. It has been this way for years, a necessary way to supplement family incomes. In their absence, the women maintain the life of the village. Women choose what gets planted and where. On this day, here in Sacaca, members of the village have gathered for a ceremony in which a high-ranking woman chooses which of the season's potatoes will go to market and which will be used as seed for the next crop.

In the next village, Kuyo Grande, where the town's single tractor resides, shrine-like, under an open thatched hut, another gathering occurs. Here the elevation is low enough for good harvests of corn--spotted yellow, white, pink, some red as pomegranates, some deep purple, like the ripest blackberries bursting with juice. Meza addresses the crowd. He is announcing a contest, sponsored by the University of Cuzco, to see which of the area's 14 villages can demonstrate the most agricultural diversity. It's his way of getting the Andeans to preserve their ancient traditions, their culture.

The only problem is, Meza has yet to determine a deadline, or even a prize.

As the light fades and the researchers pile into the pickup for the long, dark ride back to Cuzco, one villager pulls aside a visitor from the United States: "Can you tell me, please," he asks, "how we can buy a VCR?" VHS, preferred.

*

Peru's most famous chef in the United States was undoubtedly the late Felipe Rojas-Lombardi. In the '80s he owned and cooked in the Ballroom, New York's very hip tapas restaurant, where he used classic French cooking techniques to modernize and popularize traditional Spanish cuisine. He died in 1991, before he had a chance to do the same for the food of his native Peru. But just before his death, he completed "The Art of South American Cooking" (HarperCollins), a cookbook in which the soup called chairo and the stews called atamalados get proper respect.

Atamalados, for instance, usually combine meat, chicken or seafood with a grain--rice, barley, orzo pasta or, best of all, quinoa. Beautiful, fiery red annatto--or achiote seeds--are used both to color and flavor the stew. (The seeds, when cooked, turn food bright - yellow; when you buy them they should be red. If they are brown or dark - burgundy, they've lost not only their color but much of their flavor as well.)

*

PORK AND QUINOA

ATAMALADO

2 pounds lean pork loin, leg, or shoulder

Garlic-Cumin Marinade

2 dried ancho chiles, seeded

1 fresh or dried mirasol chile or dried red chile, seeded

Water

1 fresh jalapeno or arbol or serrano chile, seeded and roasted

1/3 cup vegetable oil

2 tablespoons Achiote Oil

2 medium onions, finely chopped

1 clove garlic, minced

2 teaspoons coarse salt

6 cups Boiled Quinoa, plus 3 cups cooking liquid or water

2 tablespoons chopped cilantro

Wipe pork with damp kitchen cloth. Cut into 2-inch cubes and place in stainless-steel bowl.

Pour Garlic-Cumin Marinade over cubed pork and mix thoroughly. Cover bowl and set aside to marinate 3 to 4 hours at room temperature or overnight in refrigerator.

Crumble dried ancho and mirasol chiles into bowl. Add 1/2 cup warm water. Soak 15 minutes. Place chiles with soaking liquid and roasted jalapeno chile in blender or work bowl of food processor and puree. Set aside.

Drain pork and pat cubes dry with paper towels. Heat vegetable oil and Achiote Oil in large, heavy saucepan over high heat. Add pork cubes and quickly brown evenly on all sides, stirring. Transfer to large plate and set aside.

Add onions, garlic and salt to saucepan. Cook over high heat, stirring frequently, until onions are golden around edges, about 8 minutes. Add pureed chiles and cook 5 minutes more, stirring constantly, until all liquid has evaporated.

Add reserved quinoa cooking liquid, blend thoroughly and heat to boiling. Add pork with juices left on plate and Boiled Quinoa. Stir, lower heat and gently simmer 30 minutes, or until pork is tender. If pork is not tender after 30 minutes and quinoa has dried out too much, add additional water and continue cooking until pork is tender. Quinoa should be moist. Adjust seasonings to taste. Sprinkle with cilantro and serve hot. Makes 6 to 8 servings.

Each serving contains about:

599 calories; 1,269 mg sodium; 68 mg cholesterol; 29 grams fat; 52 grams carbohydrates; 33 grams protein; 3.86 grams fiber.

Note : Quinoa is available in most health food stores. Annatto

seeds can be bought in most Latino food stores and in the specialty sections of grocery stores.

* Garlic-Cumin Marinade

2 cloves garlic

2 teaspoons coarse salt

1/2 teaspoon ground white pepper

1/2 teaspoon ground cumin

1 tablespoon red wine vinegar

In mortar with pestle, pound garlic, salt, white pepper and cumin to smooth paste. Add vinegar and mix well.

* Achiote Oil

1 cup olive or vegetable oil

1/2 cup annatto (achiote) seeds

1 dried red or serrano chile, crumbled

1 bay leaf

Combine oil, annatto seeds, red chile and bay leaf in small saucepan. Let stand, stirring occasionally, 30 minutes.

Place saucepan over low heat and bring to gentle boil while stirring. Immediately remove from heat and cool thoroughly, stirring occasionally.

Pour oil through fine sieve or through strainer lined with several layers of cheesecloth. Discard chile and bay leaf and check color of annatto seeds. Oil is now ready to use or store. To store, pour into jar, tightly cover and refrigerate up to 1 year. Makes about 1 cup.

* Boiled Quinoa

2 1/3 cups quinoa

Pour quinoa into large bowl of cold water and wash, rubbing between hands. Drain. Repeat until water is clear, usually 2 washings.

Combine quinoa with 8 to 10 cups cold water in stockpot. Bring to boil, stirring occasionally. Lower heat and simmer about 10 minutes, or until barely cooked. Quinoa is done when all grains turn translucent. Remove quinoa from heat and pour through strainer, draining well. Do not rinse. Fluff with fork to cool, if desired. Quinoa may be stored in tightly covered container in refrigerator until ready to use. Makes 6 to 7 cups.

*

When making this soup from Rojas-Lombardi, remember the words of Dr. Carlos Arbizu: "A chairo without chuno is like life without love." Chairo is considered Bolivian, but it's really pan-Andean--its key ingredient is chuno-- freeze-dried bitter potatoes that are eaten throughout the highlands. Chuno is available in Peruvian grocery stores, sold dry in bags or canned. Harder to find is another main chairo ingredient--charqui, or dried llama meat. Beef is used here.

* CHAIRO

(Andean Beef and Vegetable Soup)

1/2 pound chuno, drained if canned

3 1/2 to 4 pounds beef chuck

1/2 teaspoon freshly cracked black pepper

3 stalks celery, with tops, cut into pieces

2 medium onions, cut into quarters

1 small head garlic, cut in half horizontally

2 dried mirasol chiles or red chiles

1 tablespoon cumin seeds

4 sprigs Italian parsley

Coarse salt

3 quarts homemade Beef Stock or canned

1/2 cup barley, rinsed and drained

1 large onion, cut into 1/4-inch dice

1 carrot, peeled and cut into 1/4-inch dice

2 large potatoes, peeled and cut into 1/4-inch dice

1 cup canned white hominy, rinsed and drained

2 tablespoons chopped Italian parsley

Soak chuno in warm water 2 to 4 hours. Drain well and squeeze gently between kitchen towels to extract excess water. Peel away outer skin. If using chuno-tunte, drain and rinse well, then pat dry with towels. Set aside.

Wipe beef with damp kitchen cloth and cut into 1 1/2-inch cubes. Place on baking sheet, sprinkle with pepper and broil as close to source of heat as possible, turning to brown all sides, about 10 minutes.

Combine browned beef, celery, quartered onions, garlic, chiles, cumin, parsley sprigs, 1 tablespoon salt and Beef Stock in stockpot and bring to boil. Lower heat and let simmer about 1 1/2 hours, or until meat is tender. Remove meat and set aside.

Strain broth through strainer lined with double layer of cheesecloth, squeezing and pressing to extract all juices. Let broth stand few minutes until fat rises to surface. Degrease thoroughly and discard fat. Approximately 9 cups broth should remain. Adjust seasonings to taste.

Combine broth, reserved meat, barley, chuno, diced onion, carrot and potatoes in large saucepan or casserole and bring to boil. Lower heat and simmer 10 minutes. Add hominy and continue cooking 15 minutes more, or until vegetables and barley are tender. Sprinkle with chopped parsley and serve at once. Makes 6 to 8 servings.

*Beef Stock

4 large onions, cut into 8 pieces

2 to 3 leeks, trimmed, rinsed and cut into 3 pieces each

1 head garlic, cut in half horizontally

8 stalks celery, with tops, cut into pieces

2 small carrots, sliced

6 pounds beef bones, preferably marrow and knuckle bones

8 pounds veal bones, preferably shank, knuckle bones and feet

1 oxtail, cut into small pieces

Water

8 whole cloves

2 bay leaves

35 sprigs thyme

24 black peppercorns

2 to 3 jalapeno or arbol chiles or 1 to 2 dried red chiles, optional

Place onions, leeks, garlic, celery and carrots in large roasting pan. Arrange beef and veal bones and oxtail on top of vegetables. Place roasting pan in upper third of 500-degree oven. Bake 1 hour.

Transfer bones and vegetables to large stockpot. Pour off and discard fat from roasting pan. Deglaze roasting pan by adding 4 cups water and bringing to full boil over high heat, constantly scraping to release bits stuck to pan. Pour into stockpot.

Add 11 quarts water, cloves, bay leaves, thyme, peppercorns and chiles. Bring to boil, skimming foam as rises to surface. Lower heat, stir, cover and simmer about 5 hours.

Remove stock from heat and let cool. Strain through fine sieve or strainer lined with double layer of cheesecloth. Discard bones, vegetables and herbs. Let stock stand 10 to 15 minutes to allow fat to rise to surface.

Degrease by scooping off fat with ladle. If stock will not be used immediately, store in refrigerator without degreasing. Degrease before using by removing hardened layer of fat from surface. Makes about 8 quarts.

*

Where chuno, made with bitter potatoes, is frozen raw and then stomped on to press out any remaining moisture, papa seca--available in Southern California in Peruvian markets--is boiled before being frozen and is not pressed. In Rojas-Lombardi's recipe, the papa seca is quickly

sauteed with peanuts, chiles, garlic and Achiote Oil.

* GUIISO DE PAPA SECA

(Andean Potatoes)

1 pound papa seca

Water

3 dried ancho chiles, seeded and cut into pieces

3 tablespoons Achiote Oil or olive oil

2 large cloves garlic, minced

1 large onion, finely chopped

1 tablespoon coarse salt

1/2 cup unsalted peanuts, finely chopped

Place papa seca in colander and shake to remove any powder. Transfer to bowl, cover with water, then drain, discarding water. Add 6 cups cold water to washed potatoes and let soak overnight at room temperature or in refrigerator. Drain and set aside.

In small bowl, soak ancho chiles in 1 1/2 cups warm water about 15 minutes, or until soft. Pour softened chiles with soaking liquid into blender or work bowl of food processor and process until smooth. Set aside.

Heat Achiote Oil and garlic in hot skillet, 1 to 2 seconds. Do not burn garlic. Mix in onion and saute over medium heat 5 minutes. Add pepper mixture and salt. Mix well and cook, stirring occasionally, until most of liquid evaporates and spoon leaves track on bottom of pan, 20 to 25 minutes.

Add peanuts and stir 1 minute. Add drained papa seca, folding in half at time. Mix well and heat over very low heat, stirring and scraping occasionally, until potatoes are hot and fluffy, about 25 minutes. Adjust seasonings to taste. Serve hot. Makes 10 servings.

*

Common wisdom among the expatriate community in Peru has it that the best Peruvian cooks are those who claim they can't cook--what they mean is they can't cook fancy Frenchified stuff. These "non-cooks" can almost always cook Peruvian home-style dishes, food that is delicious but considered too humble for company. This is one of those secret dishes--and if ollucos (ullucos, to the scientists) could ever make it into this country fresh, it's unlikely olluquitos would remain hidden for long. Until then, we'll have to make due with canned ollucos, available in most Peruvian grocery stores. This recipe is adapted from one in the out-of-print "Peruvian Cooking Art" by Josefina Brusco de Liberti. If you come across some dried llama meat, feel free to substitute for the beef.

* OLLUQUITOS

1/4 pound carne seca (dried beef)

Oil

1 clove garlic

2 to 3 mirasol chiles or habanero chiles, minced

Cumin seeds

Annatto seeds, optional

1 small onion, chopped

Dash oregano

Salt

Pepper

2 cups julienned ollucos or yellow Finnish potatoes

1/2 tablespoon parsley

Cooked white rice, optional

Toast carne seca lightly on dry grill or in skillet. Place in bowl of warm water and let soak 4 hours or overnight, changing water several times. When meat is soft, shred to get about 1 cup.

Coat skillet with oil and heat. Lightly saute garlic. Add minced chiles, cumin and annatto seeds to taste and saute. Add chopped onion, oregano and salt and pepper to taste. Saute until liquid leaves onions.

Add shredded meat and saute. Add ollucos and saute. Adjust seasonings to taste. Garnish with parsley. Serve with rice. Makes 4 servings.

Each serving contains about:

144 calories; 1,065 mg sodium; 12 mg cholesterol; 4 grams fat; 18 grams carbohydrates; 11 grams protein; 0.88 gram fiber.

*

This isn't a traditional Peruvian dish, but it is a delicious use of the Andean grain quinoa. The recipe comes from Rojas-Lombardi's "The Art of South American Cooking."

* QUINOA CAKE

1 1/2 cups quinoa
6 tablespoons unsalted butter, softened
3/4 cup dark-brown sugar, packed
4 large eggs
1 teaspoon ground cinnamon
1/4 teaspoon ground cloves
2 teaspoons vanilla
1 teaspoon grated lemon zest
1/4 cup dark rum
1/2 cup milk
1/2 cup heavy whipping cream
1/2 cup finely chopped walnuts
1/2 tablespoon powdered sugar

Creme fraiche or whipped cream, optional

Place quinoa in fine sieve, rinse under cold running water and drain.

Combine quinoa with 8 cups water in saucepan. Bring to boil, lower heat and simmer about 10 minutes, until quinoa is barely tender. Do not overcook. Remove from heat, pour quinoa through fine strainer and let drain. Do not rinse.

Cream butter and sugar together in mixing bowl until fluffy. Add eggs 1 at a time. Beat well. Stir in cinnamon, cloves, vanilla, lemon zest, rum, milk and cream. Mix well.

In separate mixing bowl, combine quinoa and walnuts. Thoroughly fold in creamed butter mixture. Pour batter into 9-inch round cake pan coated with about 1 tablespoon butter.

Bake at 350 degrees 1 hour and 30 minutes. Remove from oven, place on rack and allow to cool thoroughly. Unmold cake and place on serving platter. Place powdered sugar in fine sieve and dust over surface of cake. Serve with creme fraiche. Makes about 8 servings.

Each serving contains about:

435 calories; 60 mg sodium; 151 mg cholesterol; 23 grams fat; 45 grams carbohydrates; 9 grams protein; 1.82 grams fiber.

*

Stirred with cream and cheese, quinoa takes on a consistency almost like polenta. In this recipe, from the International Potato Center in Lima, the creamed quinoa is topped with sauteed tomatoes and onions.

* CREAMED QUINOA

Oil
1/2 large onion, diced
1 clove garlic
1 large tomato, diced
1 cup quinoa
Salt
1/4 pound ranchero cheese, diced
1/2 cup half and half
Pepper

Coat skillet with oil and heat. Lightly saute onion and garlic. Add tomato and saute until tomato is heated through and onion is translucent. Set aside.

Rinse and pick through quinoa, removing any stones. Heat 4 cups water

and salt to taste in large saucepan until boiling. Add quinoa in thin stream to boiling water. Cook, stirring often, about 30 minutes, until water is absorbed.

Heat half and half to just below boil. Slowly pour hot half and half into quinoa, gradually incorporating cheese and stirring constantly until creamy. Top with sauteed onion and tomato. Season to taste with salt and pepper. Makes 4 cups or 8 servings.

Each serving contains about:

190 calories; 125 mg sodium; 33 mg cholesterol; 11 grams fat; 16 grams carbohydrates; 7 grams protein; 1.12 grams fiber.

Sources

Until fresh native produce from the Andes can be sold in the United States, home cooks must make do with dried, canned or processed products. The dried items come closest to what is eaten in Peru. Andean freeze-dried potatoes, chuno and papa seca, are sold in bags, just as you'd find them in Peruvian markets. Try the dried mirasol chile or the super-fiery rocoto, available here pickled.

Oca and ulluco (labeled olluco) are sold canned in brine. Use them and you'll get the idea of what the vegetables are like, but don't expect them to come close to what you can get fresh in the Andes. Huacatay, black mint, is an herb used throughout Peru, especially to flavor meats; a preserved version is available here in jars.

The places to buy these products include the following stores:

* Catalina's Market, 1070 N. Western Ave., Los Angeles, (213) 464-3595.

* El Condor, 15400 S. Hawthorne Blvd., Lawndale, (310) 675-9931.

* La Colina Market, Hill Plaza, 290 N. Hill Ave., Pasadena, (818) 568-1192.

CAPTIONS: PHOTO: COLOR, From the mountains that surround Peru's Urubamba Valley, the Sacred Valley of the Incas, left;; PHOTOGRAPHER: LAURIE OCHOA; PHOTO: COLOR, come some of the world's most unusual roots and tubers.; PHOTOGRAPHER: International Potato Center; PHOTO: COLOR, Inca comfort food: Creamed quinoa; PHOTO: COLOR, In a stew: Pork and quinoa atamalado.; PHOTOGRAPHER: JIM MENDENHALL / Los Angeles Times; PHOTO: COLOR, Harvest Time: A farmer in the village of Amaru.; PHOTOGRAPHER: LAURIE OCHOA; PHOTO: Women, children and the omnipresent potato in the Peruvian village, Quello Quello.; PHOTO: Proof that woman does not live by potatoes alone: corn display in the Andean village of Paruparu.; PHOTO: Traditional Peruvian weaving in the village of Sacaca.; PHOTO: Microwave of the gods: roasting potatoes in mud oven, Amaru.; PHOTOGRAPHER: LAURIE OCHOA; PHOTO: The world's foremost spud spotter: Dr. Carlos Ochoa.; PHOTOGRAPHER: International Potato Center; PHOTO: Dr. Gregorio Meza of the Andean Crop Research Center, in Cuzco.; PHOTO: Raiders of the lost tubers: Dr. Carlos Arbizu, left, and team.; PHOTOGRAPHER: LAURIE OCHOA; PHOTO: Secret dish of the Incas: Olluquitos is a delicious combination of meat (llama, preferably), chiles and the tuber ulluco.; PHOTOGRAPHER: RANDY LEFFINGWELL / Los Angeles Times

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SPECIAL FEATURES: PHOTO

16/9/4 (Item 2 from file: 630)
DIALOG(R)File 630:Los Angeles Times
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00234565 (THIS IS THE FULLTEXT)
In the Valley of the Ancient Ones

In the Southern Ecuador Village of Vilcabamba, Centenarians Are
Common--Thanks to a Fertile Climate, Peaceful Setting and the
Mineral-Rich Agua d'Oro

STEVE SILK, THE HARTFORD COURANT

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VILCABAMBA, Ecuador - Nobody wants to get old. But, as the joke says, when you consider the alternative, it's not so bad--especially for those who live in Vilcabamba, a sleepy, almost comatose town adrift in the Andes of southern Ecuador.

Folks in Vilcabamba have a reputation for long life. Very long life. More than a few say they have passed the century mark; people in their 80s and 90s appear almost common. And the Ancient Ones, as they are called, maintain their health and vitality right to the end. Heart disease is virtually unknown and cancer is a rarity, according to doctors at the local Kokichi Otani Hospital.

Claims that some villagers had celebrated their 130th and 140th birthdays are questionable at best, but life of every kind thrives with special zeal in Vilcabamba.

According to local legend, this was the original Garden of Eden. Flowers and fruit trees are everywhere. Seeds practically burst into bloom in the rich soil. Fence posts sunk in the fields routinely sprout new leaves. Even the animals are healthy. The dogs are perhaps the most robust in all South America--one mutt is said to have lived to 37.

News of this so-called Sacred Valley of Longevity reached the outside world about 20 years ago, courtesy of an anthropologist who visited Vilcabamba. Since then, scientific researchers and a slowly increasing trickle of visitors from around the world have been riding the gaily painted but battered buses that lurch through the Andes to reach this storied Shangri-La.

And although scientists doubt there's anything like a fountain of youth hereabouts, visitors aren't so sure. After all, vacationers at hotels such as Madre Tierra (Mother Earth) can easily avail themselves of all the things that locals say contribute to their longevity: peace, healthful food, a perfect climate and abundant natural beauty.

An almost transcendent tranquillity suffuses Vilcabamba. You're never far from the call of a rooster, the moo of a cow or the chirp of birds. The climate, eternally springlike, is adjudged to be perfectly suited to the human organism. It's hard to say whether it's the profusion of flowers, the lush green of patchwork fields or the heavenly blue canopy of the sky, but there's something distinctly otherworldly about Vilcabamba.

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Here, where five valleys converge in the shape of a star, peace is maintained by the spirit of the Reclining God, the huge and eerily Incan-looking stone profile that stares eternally skyward from the summit of Mandango, a mountain that dominates the western skyline like a thunderhead.

Exploring the Reclining God's domain--and meeting some of the Ancient Ones--is as easy as mounting a horse and riding off down the Avenue of Eternal Youth, straight into the heart of town. Just about every one of

the five hostelries in town, from the grungy-but-cheap Valle Sagrado (Sacred Valley) to the well-appointed (by local standards) hacienda-style Hosteria de Vilcabamba, can get you saddled up.

Riding into town is like galloping into the pages of a dreamy Gabriel Garcia Marquez story. Sprawled-out, snoozing dogs clutter the main street. Now and then, they are awakened as a somnambulant campesino leads a string of cargo-laden mules past the mostly empty cafes on the town square. Sometimes the church bells ring. Other than that, not much happens.

Just around the corner, a frail-looking Abertano Roa is basking in the afternoon light, shaded by an enormous hat.

"I'm the oldest one here," he says, wagging a finger at a visitor. "There's nobody older than me."

Roa says the sweet water and tranquil atmosphere of Vilcabamba are what has kept him alive for such a long time. The reed-thin man says he is 120, but Victor Carpio Toledo, who works at the local hospital, says Roa is exaggerating. "He's only 116," Carpio Toledo says.

A lack of documentation makes proving the ages of the Ancient Ones impossible.

Down a side street, 94-year-old Alfonso Ojeda-Bastides fires up a cigarette hand-rolled in brown paper. Smoke curls from under his battered sombrero. "Everybody in Vilcabamba smokes," he says, laughing, and nobody worries about the consequences.

The Ancient Ones are hardly ascetics. Like Ojeda-Bastides, they puff on big stogies stuffed with chamico, a leafy herb sometimes smoked to relieve asthma or cold symptoms; drink gut-burning trago, a moonshine distilled from sugar cane, and, according to some published reports, indulge in promiscuous behavior. It's hardly the prescription for health in the U.S..

Over the hills to the east of Ojeda-Bastides' adobe home lies one of the only traditional tourist attractions in Vilcabamba: a down-at-the-heels park with an orchid-arium displaying almost 400 varieties of orchids.

Along the winding dirt road that leads to the park, you might pass Gustovio Luzon, 97, working hard in cane fields so steep it's almost impossible to stand upright. Dressed in patchwork coveralls, rheumy-eyed Luzon vigorously shreds leaves from maturing stalks. He's been working all day, without even a stop for lunch.

"The old ones never get tired," says passerby Fanny Macas, 38. "When we're like them, we'll be strong too."

Only 20 years ago, the modern world had not set foot in Vilcabamba. Many of history's currents have swept past this pinprick on the map--no one seems too sure where the inhabitants even came from. A generation ago there was no radio, no TV, no plumbing, no electricity. Now the outside world has established a toehold, and Vilcabamba is changing.

*

But the mineral-rich waters that course through town are still free for bathing, and a dip in the rivers--the Chamba and the Uchima--is said to rejuvenate body and soul. Farther up into the hills, the cold waters of the even-purer Rio Yambala vault from the high peaks of Podocarpus National Park to spill through a steep valley en route to the river's confluence with the Chamba.

Vilcabamba is one of the few places in South America where you not only can drink the water, you should. Many Vilcabambans consider the mineral-rich water issuing from a bubbling spring just outside of town to be the very elixir of longevity. A one-liter carton of Agua d'Oro, the supposedly life-enhancing liquid, costs 500 sucres (about 25 cents).

Yes, commercialization has reached even this distant outpost--foreigners are attempting to cash in on Vilcabamba's reputation

by marketing the water in Europe. The water merchants are among immigrants from around the world who have settled in Vilcabamba and its surrounding hamlets.

They include hippies who have drifted here to live holistic life styles far from Western civilization and to nibble the bitter green flesh of the San Pedro cactus, a powerful hallucinogen. The upright cactus, used in ancient lunar rituals and by Peruvian shamans, thrives in valleys around Vilcabamba.

One of the first of the "lotus eaters" to emerge in the area was a Californian called Johnny LoveWisdom. The self-styled guru, who once lived on nuts and meditation in the Andes of northern Ecuador, maintains Vilcabamba is healthy because the valley's inhabitants are exposed to toxin-killing radiation spawned by magnetic sun storms.

A small band of followers rallied around LoveWisdom's holistic living banner, but most have since retreated into the backwoods of the Vilcabamba region to continue their Aquarian Age lifestyles. Many maintain contact with the growing tourist trade, working as guides, hoteliers and massage therapists.

*

The newcomers, hippies and otherwise, eke out a meager but contented existence. They have learned there's no great secret to farming in Vilcabamba. Basically, you drop a seed on the ground and stand back. Trees in patchwork fields are bowed with the weight of bananas, oranges and avocados. Datura trees, heavy with cream-colored, trumpet-shaped blossoms, are planted outside many of the whitewashed adobe homes; locals believe the plant protects their dreams.

Many of the fields are fastened precariously to the sides of steep mountains. Some folks joke about farmers falling out of their fields and breaking legs. But others say scaling the steep grades day in and day out is a form of aerobic exercise that contributes to the locals' robust health and longevity.

Finally there's the exceptionally pure air said to be produced by the local huilca trees. The trees have been a godsend to Abel Espinosa and his wife.

The couple moved to Vilcabamba more than 20 years ago from near Quito. At the time, Espinosa's wife was recovering from brain surgery, and Espinosa wasn't feeling too well himself. Heart problems, he says. A doctor suggested Vilcabamba would be a good place to recuperate. Now 78, Espinosa agrees. His wife is still frail, but Espinosa says he feels great, thanks in part to the fresh air pouring from the huilca trees he's planted around his modest home.

Now, the healthy looking bear of a man says he's settling in for the long haul. "In 20 or 30 years, you'll see me, and I'll look the same," he says thumping his chest.

With any luck, Vilcabamba will look the same, too.

GUIDEBOOK

Visiting Vilcabamba

Getting there: Vilcabamba may be far removed from the modern world, but getting there presents no special difficulties. Quito, the capital of Ecuador, is served by several U.S. and Ecuadorean airlines. A 30-day advance-purchase, round-trip ticket from LAX on American, Ecuatoriana or Continental currently costs \$861. From Quito, fly into the provincial capital of Loja in mountainous southern Ecuador. (Flights operate daily except Sundays and cost about \$50.) From the Loja airport, hire a taxi to take you to Vilcabamba. The 90-minute ride should cost about \$20; expect to bargain for the fare. Alternatively, take a series of local buses into Loja and on to Vilcabamba. In Vilcabamba, the best way to get around is on foot or horseback.

Where to stay and eat: The Hosteria de Vilcabamba, situated in the countryside about a mile from the town, is the best in the area. The faux

hacienda has a swimming pool, modest spa facilities and a good restaurant. Rates are about \$40 a day. Write c/o Hidaltur Travel Agency, Loja, Ecuador; there is no telephone.

Nearby is the Madre Tierra, a favorite with the backpacking set. The hostelry has several thatch-roofed cabins with spectacular views as well as a few hotel-like rooms. Plan on spending about \$8 per person a day. Rates include breakfast and dinner. Write P.O. Box 354, Loja, Ecuador; no telephone.

Several miles from town are Charlie's Cabanas Rio Yambala. The handful of modestly equipped housekeeping cabins are spectacularly sited in a steep-walled valley. Rates are well under \$10 daily. No address or telephone; inquire locally.

Side trips: There is excellent horseback riding throughout the Vilcabamba area. Hikers can climb Mandango or explore ancient burial grounds near the town.

Podocarpus National Park is also nearby; it is reputed to be one of the most beautiful areas of Ecuador. Visitors should be prepared for chilly nights: Podocarpus is about 10,000 feet above sea level. Lakes in the mountainous area are regarded as sacred by the locals. Guided tours and mountain biking trips can be arranged; inquire locally.

For more information: Perhaps because of its isolation, Vilcabamba is all but ignored by most guidebooks. The most extensive information can be found in the Cadogan series guide, "Ecuador, the Galapagos & Colombia."

For an American company that specializes in travel in Ecuador, write to Adventure Associates, 13150 Coit St., Suite 110, Dallas, Tex. 75240; telephone (800) 527-2500.

CAPTIONS: PHOTO: COLOR, Raising cane: Gustavo Luzon, 97, still works six days a week in the fields around Vilcabamba.; PHOTO: COLOR, Many consider the water from a spring outside town to be the very elixir of longevity.; PHOTO: Lush landscape: Cane fields surround a farm compound in the "Sacred Valley."; PHOTOGRAPHER: BRAD CLIFT / The Hartford Courant; GRAPHIC-MAP: Location of Vilcabamba, Ecuador, VICTOR KUTOWITZ / Los Angeles Times

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SPECIAL FEATURES: PHOTO; MAP

16/9/5 (Item 1 from file: 631)
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01578985
COOK IT YOUR WAY MACARONI, CHEESE WITH SAUSAGE
BOSTON GLOBE (BG) - WEDNESDAY March 9, 1983
Edition: N Section: FOOD
Word Count: 490

TEXT:
This recipe may be prepared in the oven, electric frypan or microwave.)
MACA RONI-SAUSAGE CASSEROLE(Basic recipe makes 6 servings)

- 1 (8-ounce) package elbow macaroni
- 1 pound bulk pork sausage, broken into 1/2-inch pieces
- 1/2 cup chopped onion
- 1/2 cup green pepper strips, cut into 1/2-inch pieces
- 3 tablespoons flour

1/2 teaspoon salt
2 cups milk

2 cups shredded Cheddar cheese

OVEN (52 minutes cooking time)

Cook macaroni in 3 quarts boiling water 6 minutes. Drain well; set aside.

Cook sausage in 3-quart Dutch oven over medium heat until browned, about 10 minutes. Remove sausage and drain on paper towels. Pour off all but 1 tablespoon drippings from pan.

In the same pan, saute onion and green pepper together with half of the sausage until vegetables are tender, about 5 minutes.

Sprinkle flour and salt over sausage-vegetable mixture. Gradually add milk; cook over medium heat, stirring constantly, until mixture boils and thickens, about 5 minutes. Boil 1 minute more. Stir in cooked macaroni and 1 1/2 cups of the cheese; mix well.

Turn mixture into a 12-by-8-by-2-inch (2-quart) baking dish. Top with remaining sausage; sprinkle with remaining cheese.

Bake in 400-degree oven 25 minutes, or until cheese melts and mixture is hot and bubbly.

ELECTRIC FRYPAN (40 minutes cooking time)

Use ingredients listed in basic recipe. Prepare macaroni as for oven and set aside.

Cook sausage in 12-inch electric frypan, set at 280 degrees, until browned, about 10 minutes. Remove sausage and drain on paper towels. Pour off all but 1 tablespoon drippings.

Increase temperature to 300 degrees. Add onion, green pepper and half of the sausage. Saute until vegetables are tender, about 8 minutes.

Reduce temperature to 220 degrees. Sprinkle flour and salt over mixture. Stir in milk. Cook at 220 degrees, stirring constantly, until mixture boils and thickens, about 6 minutes.

Stir in cooked macaroni and 1 1/2 cups of the cheese; mix well. Top with remaining sausage; sprinkle with remaining cheese. Cover and cook at 220 degrees 10 minutes, or until cheese melts and mixture is hot and bubbly.

MICROWAVE OVEN (high setting: 34 minutes cooking time)

Use ingredients listed in basic recipe. Prepare macaroni as for oven and set aside.

Place sausage in 12-by-8-by-2-inch (2-quart) glass baking dish. Microwave (high setting) 4 minutes. Stir. Microwave 4 minutes more.

Remove sausage and drain on paper towels. Pour off drippings. Place onion, green pepper and half of the sausage in same dish. Cover with waxed

paper. Microwave (high setting) 3 minutes. Stir. Microwave 3 minutes more, or until vegetables are tender.

Stir in flour and salt. Add milk. Microwave (high setting) 5 minutes. Stir after each minute.

Combine cooked macaroni and 1 1/2 cups of the cheese; stir into dish; mix well. Top with remaining sausage. Cover with waxed paper. Microwave (high setting) 3 minutes. Rotate dish one-half turn. Microwave 3 minutes more.

Top with remaining cheese. Microwave (high setting) 3 minute. Let stand, covered, 5 minutes. FY0120;12/31,10:31 LDRISC;03/10,11 B07768535

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DESCRIPTORS: RECIPES

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LOST CROPS OF THE INCAS ARE AWAITING DISCOVERY
Oregonian (PO) - TUESDAY, October 12, 1993
By: LAURIE OCHOA - LA Times - Washington Post Service
Edition: FOURTH Section: FOODDAY Page: FDOP 2
Word Count: 1,067

TEXT:

Summary: Ancient varieties may one day be as important as potatoes, wheat and corn, while helping Peru's impoverished farmers

It's late May, turning to June in Pisac, Peru. Harvest time in the Andes. Almost a month into the dry season, the sky is gray; the hillsides lush green, soaked with rains that defy the calendar.

In the bed of a dented white pickup truck, riding the bumps and ruts of a narrow dirt road just above Pisac, Dr. Carlos Arbizu grips the side of the vehicle with one hand and gestures toward the terraced landscape with the other.

"Do you see over there?" he asks, his voice shaking in time to the rhythm of the shuddering truck. "All the way up the mountain? Those houses come from Inca times. That's where they used to process gold.

"Now, that smoke at the top of the hill, that is from the famous mud ovens, watia, in which potatoes, just harvested, are being baked for somebody's lunch. And can you see that copper-colored field to the left? That is kiwicha, or amaranth as you say. Over there where it turns red, that's quinoa. And the dark patch up high -- that is potato."

Peru's ancient cities are ruins. The gold is gone. Yet the Inca empire lives on. Look at the faces of the women at the Sunday marketplace at Pisac. And here, in a cluster of mountain villages tenuously anchored onto the inclines of the Urubamba, the Sacred Valley of the Incas, most of the fieldwork is done with the sweat of human labor, the tools little changed in the near half-millennium since the Spaniards arrived.

- Patchwork of crops

Farming terraces, many of them the same ones Francisco Pizarro saw when he came to conquer the Inca capital of Cuzco, still blanket the steep slopes, a colorful patchwork of colors -- purple and magenta, orange and yellow, greens of every hue.

These are the colors of what some call the lost crops of the Incas, protein-rich treasures that the Spaniards left behind: the grains quinoa and kiwicha; the giant-kerneled corn called blanco; the beanlike lupin seeds called tarwai; and potatoes of every size, shape and color, so varied in flavor and texture that one believes the Peruvians when they talk about potato connoisseurs, as exacting as wine lovers.

And then there are the crops that few in this country have even heard of: ulluco, a slippery, nutty-tasting tuber, often Day-Glo yellow freckled with scarlet; oca, a dimpled, odd-looking, slightly sweet tuber, which Andean women eat after giving birth to regain their strength; the radish-shaped maca, perhaps the only crop in the world to produce reliable yields at an altitude of about 14,750 feet (plus, it tastes a little like butterscotch); mashua, which, for those unafraid of its famous side effect -- a depressed sex drive -- contains almost as much protein as milk. Incan women, it is said, used to try to keep their husbands in line by secretly feeding them plenty of mashua before they left for battle or long journeys, a technique some Andean women still find useful.

If Peruvian farmers and scientists have their way, some of these crops might show up in the produce bins at your local supermarket and in the kitchens of some of the country's best restaurants.

A few years of research and some bureaucratic wrangling will inevitably pass before Peru sets up a reliable importation system, as Chile has done for its agricultural products. Meanwhile, dozens of ancient crops wait to be discovered by the outside world, crops that may one day be as economically important as wheat, corn -- or the potato.

If a market for Peru's agricultural products is developed, it could help ease some of the highlands other problems. The former Inca empire is among the world's poorest regions. And the higher you go in the mountains, the worse things get. Most mountain villages have no running water or electricity; infant mortality rates are high.

Still, the Andeans have fierce pride in their culture. And growing international interest in their crops -- dismissed for years as the food of the poor -- could mean an improved livelihood for the farmers.

- Experts in farming

The Incas may have been the ancient world's greatest agronomists. They hadn't discovered iron, they didn't have cows or oxen to work their fields, they didn't even have a written language. But they transformed some of the earth's most hostile terrains -- frost-susceptible, sharp-rising mountains, different microclimate occurring sometimes every few feet -- into fertile, productive farmland.

By the time the Spaniards arrived, the Incas had cultivated an estimated 70 different crop species, almost as many as their contemporary farmers in the "developed" societies of all Europe or all Asia.

Descendants of the Incas still use many of the ancient techniques, methods that some boutique farmers in the United States have recently adopted as models for their own sustainable agriculture systems.

Andean farmers, for instance, rarely depend on just one crop; often they work several fields, each at different elevations, with varying weather conditions. One farmer might plant 50 different grains, roots, tubers and legumes, knowing that at least some of them will survive whatever pest or disease is most virulent that year.

Fields are often intercropped -- quinoa and corn, for instance, might be grown on the same plot. And continuous crop rotation keeps the soil in shape and helps prevent parasites.

- Turning the soil

At one farm, three young Andean men, each wielding a taclla, or foot plow, lean into the soil and turn over clumps of moist earth, as if working a thick biscuit dough with giant wooden spoons.

"This is a pre-Inca technique," Arbizu says, "the usual way of making the soil productive. They want to use as much land as possible. And if there is less rain next year, maybe a drought, the water will already be down there for the roots of the new crops."

Raised in Peru's remote department of Ayacucho in the central Andes, Arbizu started collecting Andean root and tuber crops some 20 years ago, and studied under the respected potato historian J.G. Hawkes in Birmingham, England. He now works as a special consultant with the International Potato Center, based in an outlying suburb of Lima.

CAPTION:
PHOTO, MAP

2 Photos by LAURIE OCHOA/LA Times-Washington Post Service
Graphic - Map by The Associated Press. PERU

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AMBASSADOR OF CHILEAN CUISINE CHEF COCO PACHECO INFUSES HIS RECIPES WITH
CHARISMA AND CREATIVITY

Orlando Sentinel (OS) - Thursday, October 11, 2001

By: Deborah S. Hartz, Food Writer

Edition: METRO Section: GOOD EATING Page: H1

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MEMO:

TYPE: RECIPE / FEATURE

TEXT:

He doesn't say "Bam!" or "Kick it up." In fact, he doesn't speak English. But in his native Chile, chef Coco Pacheco is as popular and well-known as Emeril Lagasse.

And like Lagasse, Pacheco is host of a television show. In his case, it's Buenos Dias a Todos and reaches more than 2 million viewers in Chile, Argentina and Peru.

"I tell jokes and I have chispa [fun energy]," Pacheco says through a translator. The show is done live so if he cuts or burns himself, it's all right there, a la Julia Child, for his viewers to see.

Pacheco has earned a reputation for gauging the crowd and playing to his audience. He boasts of having charisma. But then he unassumingly quips, "I do all I can so people don't fall asleep."

He put on a performance recently at South Florida's Cookworks Santa Fe in Bal Harbour Shops where he gave a cooking class for about 30 people. He is known for his seafood cookery so, of course, the menu was heavy on fish.

He uses only the freshest Chilean products such as salmon and king crab. He also brought such specialties as canned macas or razor clams for seafood empanadas.

It's such visits that have given Pacheco the reputation of "Chile's ambassador of gastronomy." Since 1984, he has traveled to 36 countries promoting Chilean food. He comes to Miami more than 20 times a year.

But he didn't start out to be an ambassador or even a chef. As a child, he was drawn to food -- seafood to be exact. At age 8, the local fishermen took him to sea.

"That helped me become an expert on seafood," he says.

He also says that in high school, when his classmates took subjects that required books, he took the home economics courses that required cheese, eggs and meat. "I'd give my friends food in exchange for their homework. I learned to barter at an early age," he says, a twinkle in his dark eyes.

By age 22, he went to work with his father who raised beans, garbanzos, potatoes, lentils and corn. They sold their crops in Santiago's central market.

By 1973, he opened Aqui Esta Coco (Here is Coco), a restaurant in Providencia, an area of Santiago. Although he has opened five restaurants throughout the years, he now owns only Aqui.

It is in a 19th-century building that has been kept much as it was when built. Pacheco has filled it with antiques and nautical memorabilia. "It's one of the few houses of the time period that has been kept as it was," he says proudly displaying pictures of it in his cookbook Cocinando al Fin del Mundo.

Then in 1990, he was asked to host a television show. And he's been cooking and cavorting ever since.

He opened his class at Bal Harbour much as he would his show: By pouring ulmo or pisco sours. This is a potent drink made by blending Key lime juice, sugar, a spirit called pisco that's 35 percent to 40 percent alcohol, and a very special honey from the ulmo tree. It grows in southern Chile and has white flowers. The honey has a very floral bouquet and gives the drink its special flavor.

"Be careful of these drinks, they are lethal," says Pacheco to the class

as he wishes his guests "salud, cheers."

Next, Pacheco prepared Scallop Carpaccio. It's a blend of cuisines drawing from both Italian and his own Hispanic background. As the name implies, it's thin slices of raw scallops flavored with lots of lemon and extra-virgin olive oil. It's garnished with minced avocados, chives, hard-boiled egg whites and yolks, tomatoes and capers .

He also uses minced Chilean papaya on this dish. It looks and tastes something like a starfruit, but is opaque yellow.

"Color and garnish are very important," Pacheco says. And you know he means it when you see his notes for the class that include diagrams of where each piece of colorful food should go on the plate. Including the whole cooked crayfish he uses to garnish the carpaccio.

Then he turns to salmon. Marinated Salmon of the Rich and Famous. It's an incredibly simple dish that takes only minutes to prepare. He dips the salmon in egg white and coats the fillet with lots of chopped fresh herbs. The egg white "glues" the herbs to the fish. Then he bakes the fish in a very hot oven for mere minutes until the center of the fillet is just warm. He serves it sliced on a bed of greens drizzled with balsamic vinaigrette and presents it with a mustardy Yogurt Salsa.

For those who enjoy Pacheco's cooking, he's adding a second television show to his schedule this fall. Revolviendo La Hoya (Turning the Pot) that will feature politicians of all persuasions ("Marxist, leftist, rightist") cooking with each other and Pacheco.

"I want the audience to see everyone is human," Coco says.

YOGURT SALSA

Serve with Marinated Salmon of the Rich and Famous.
Yield: 1 1/4 cups.

1 cup plain yogurt

Juice of 1/2 lemon

1 tablespoon olive oil

1/2 teaspoon cumin

1 tablespoon Dijon mustard

Juice of 1/2 lime (for better flavor use a green Key lime)

Sugar as needed (optional)

Sea salt and freshly ground black pepper to taste

1. In a nonreactive bowl, combine all ingredients.

2. Mix well.

Nutrition information per tablespoon

Calories16Fat1 gCarbohydrate0.81 g

Fiber0.03 gSodium25 mgProtein0.49 g.

MARINATED SALMON OF THE RICH AND FAMOUS

Yield: 2 servings.

2 egg whites

1 (8-ounce) salmon fillet about 1 1/4 inches thick, boned, skinned and very well-trimmed

1 cup chopped mixed fresh herbs (chives, dill, marjoram, oregano, basil, Italian parsley)

Freshly ground black pepper to taste

Yogurt Salsa (see recipe)

1. Whisk egg whites in a large bowl until frothy. Add the fish and coat it with egg. Place fish on a work surface. Press herbs onto fish on all sides. Place in a nonreactive baking dish. Season with pepper. Cover with foil and refrigerate 1 hour or up to 2 hours.

2. When ready to cook, heat oven to 400 F (let heat at least 15 minutes). Leave fish covered and bake 10 minutes or until center is still raw and outer surfaces are barely cooked. Do not overcook.

Nutrition information per serving without Yogurt Salsa

Calories 206 Fat 8 g Carbohydrate 2 g

Cholesterol 170 mg Sodium 124 mg Protein 29 g.

SCALLOP CARPACCIO

Use high-quality fresh scallops from a fishmonger. To take the bitterness out of Key lime skins, chef Coco soaks them in cold water about 15 minutes before squeezing.

Yield: 1 serving.

2 very large or 4 medium-sized extremely fresh sea scallops

1 lime (for better flavor use a green Key lime)

1 tablespoon extra-virgin olive oil

Sea salt and fresh-ground black pepper, to taste

1 tablespoon chopped hard-boiled egg white

2 teaspoons chopped hard-boiled egg yolk

2 teaspoons minced tomatoes

1 teaspoon minced avocados

1 teaspoon capers, drained

1 teaspoon chopped chives

Parmigiano-Reggiano for garnish

1. Freeze the scallops on a plate about 15 minutes to make slicing

easier. Using a very sharp knife, slice the scallops horizontally into very thin discs or very thin rounds. Place rounds in a single layer on a nonreactive plate.

2. Cut lime in half and squeeze over the scallops. Sprinkle with oil. Season with salt and pepper. Sprinkle the egg whites and yolks over the scallops. Sprinkle tomatoes, avocados, capers and chives over scallops.

3. Garnish with shaved Parmigiano-Reggiano.

Nutrition information per serving

Calories 217 Fat 17 g Carbohydrate 4 g

Cholesterol 88 mg Sodium 218 mg Protein 12 g.

CAPTION:

PHOTO

PHOTO: Plate diplomacy. Pacheco is host of a television show that reaches more than 2 million viewers in Chile, Argentina, Peru.

CARL SEIBERT/SOUTH FLORIDA SUN-SENTINEL.

PHOTO: Crowning touch. Pacheco tops Scallop Carpaccio with a crayfish. The dish is a blending of his Italian and Hispanic background

CARL SEIBERT/SOUTH FLORIDA SUN-SENTINEL.

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USING YOUR RAMEN NOODLES

Lexington Herald-Leader (LH) - WEDNESDAY, June 1, 1994

By: Sharon Thompson Herald-Leader food writer

Edition: Final Section: Lifestyle - Food Page: D1

Word Count: 1,055

TEXT:

Ramen noodles, which have kept many a college student from starvation, are moving up on the culinary scale.

Anyone who has ever pinched pennies knows ramen noodles.

They're probably the cheapest food in the market with such a wealth of flavor.

Normally, ramen noodles cost about a quarter for a 3-ounce package, but often they're six for \$1 on sale.

At that price, who can resist? That's how most people get hooked.

The noodles become an instant meal when boiled in water two to three minutes.

They come in cellophane packages -- shaped into a cake that looks like curly shredded wheat -- with a flavor packet.

Flavors include Oriental, lobster, garden vegetable, chicken, beef and pork.

Ramen noodles are a hit with the cost-conscious, but they're not a top choice with nutritionists.

Some of the seasonings contain monosodium glutamate, which can cause allergic reactions in some people. A serving of ramen noodles with seasoning contains about 1,740 milligrams of sodium.

An alternative is to find a good bouillon that you like and use it instead of the flavor packet or use only half a package of seasoning.

But high sodium content isn't the only problem with packaged instant ramen noodles. They are usually made of wheat flour, oil, and salt, but most manufacturers deep-fry their noodles in oil -- often corn, soy or cottonseed, but sometimes in the highly saturated palm or coconut.

If you're willing to pay the price, you can find more healthful noodles.

Some are air-dried -- those packages are usually labeled -- and health food stores carry noodles with all natural ingredients. However, they cost \$1.59-\$1.69 a package.

"You're paying for more food value and taste," said Betty Kendrick, manager/buyer at Good Foods Co-op.

Jake Gibbs, owner of Alfalfa's restaurant, chooses the more healthful variety. He discovered ramen noodles while in graduate school. "I eat them at home a lot. I love them," he said.

"I go in phases where I eat them a few times a week."

Cooks have discovered many ways to use the inexpensive noodles by combining them with other ingredients.

Recipe ideas can be found in The Book of Ramen (\$9.95, Turtleback Books) by Ron Konzak, and 101 Ways to Make Ramen Noodles (\$9.95, C&G Publishing) by Toni Patrick.

Konzak, of Friday Harbor, Washington, shares many ideas for making international-style gourmet meals for less than \$5. He offers recipes for chop chae, ramen mousaka and Hungarian noolash as well as ramburger and maca-ramen and cheese.

Konzak, an architect and musician, ate pounds of ramen noodles when he lived along and worked at home. "I ate them all the time. After eating them for such a long time, I became bored and started making variations," he said.

Konzak had a nice collection of ramen recipes and decided to put them in a book. "It took me seven years to put it together," he said. When ramen noodles are on sale, he buys armloads.

"We have earthquake jitters here," said Konzak, who keeps plenty of noodles on hand in case of an emergency.

Their shelf-life seems to be forever.

Ramen with fresh basil sauce

1

package ramen noodles

1

teaspoon olive oil

7

fresh basil leaves

1/2

clove garlic

2

teaspoons butter

2

tablespoons heavy cream

Parmesan cheese

Salt and pepper to taste

In a small saucepan, cook ramen noodles in two cups of water, boiling for three minutes. Pour in olive oil. Drain in a colander and return to saucepan.

While waiting for the noodles to cook, chop basil and garlic. Add to drained noodles along with butter and cream. Mix all together and serve in a soup plate. Sprinkle with Parmesan cheese.

Guacaramen

1

package ramen noodles

1

medium avocado, chopped fine

1

medium tomato diced fine

1

small scallion, chopped fine

2

tablespoons mayonnaise

1

tablespoon lemon or lime juice

1/2

teaspoon garlic powder

1/4

teaspoon flavor packet

1/4

teaspoon coriander, ground

In a small saucepan, boil noodles in 2 cups of water for five minutes. When noodles are done, put into a strainer, rinse with cold water and let drain for a few minutes, shaking the water out to make them as dry as possible.

Mix remaining ingredients together. Add noodles and mix thoroughly again. Goes well with a burrito or taco. Serve cold.

Ramen Ronaldo

1

package ramen noodles

1

tablespoon butter

1

tablespoon flour

1/3

cup milk or cream

1/2

teaspoon garlic powder

1

dash nutmeg

3

tablespoons Romano or Parmesan cheese

Salt and pepper to taste

In a small saucepan, boil noodles in 2 cups of water for 5 minutes. When noodles are done, put into a strainer, rinse with cold water and let drain for a few minutes, shaking the water out to make them as dry as possible.

In another small saucepan, make a white sauce by cooking the flour in the butter on medium heat until golden brown. Stir frequently with a fork or whisk.

Pour in milk and spices and cook until thickened. Pour over noodles in a plate and sprinkle with Romano or Parmesan cheese, grated.

Spanish noodles

1/4

cup chopped onion

1/4

cup chopped green pepper

1

14 1/2-ounce can stewed tomatoes

1

flavor packet

1/4

teaspoon chili powder

1/4

teaspoon basil

1

package ramen noodles

1

tablespoon oil

1/4

cup Monterey Jack cheese,

grated

Saute onions in a medium saucepan until almost transparent. Add chopped green pepper and saute for another minute. Add stewed tomatoes, flavor packet, chili powder and basil.

Knead unopened package of Ramen noodles until broken up very fine. Add to the mixture, mixing in well and breaking up any large pieces of tomato with a spatula.

Bring to slow boil, stirring frequently as this tends to scorch if left untended. If the mixture looks too dry, cook carefully for a minute before adding additional water as the tomatoes tend to give off more liquid when boiled. Keep covered while cooking, but stir often, checking to see if additional water is needed. Cook for 5 to 7 minutes. The mixture should end up thick, not watery. Serve with refried beans as a side dish, sprinkle grated cheese over noodles and beans.

CAPTION:

Ramen noodles dressed up with shimp or fresh vegetables is a far cry from eating them plain and out of the pot in college.